

IOWA STATE UNIVERSITY

Digital Repository

Graduate Theses and Dissertations

Iowa State University Capstones, Theses and
Dissertations

2009

Accessing and affording child care and low-income mothers' employment over time: An ecological approach

Brinn Hope Shjegstad
Iowa State University

Follow this and additional works at: <https://lib.dr.iastate.edu/etd>

 Part of the [Family, Life Course, and Society Commons](#)

Recommended Citation

Shjegstad, Brinn Hope, "Accessing and affording child care and low-income mothers' employment over time: An ecological approach" (2009). *Graduate Theses and Dissertations*. 11090.
<https://lib.dr.iastate.edu/etd/11090>

This Dissertation is brought to you for free and open access by the Iowa State University Capstones, Theses and Dissertations at Iowa State University Digital Repository. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

**Accessing and affording child care and low-income mothers'
employment over time: An ecological approach**

by

Brinn Shjegstad

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Human Development and Family Studies

Program of Study Committee:
Brenda J. Lohman, Major Professor
Susan Hegland
Carla A. Peterson
Steven B. Garasky
Daniel Russell

Iowa State University

Ames, Iowa

2009

Copyright © Brinn Shjegstad, 2009. All rights reserved.

TABLE OF CONTENTS

LIST OF FIGURES	iii
LIST OF TABLES	iv
CHAPTER 1. GENERAL INTRODUCTION	1
Introduction	1
Dissertation Organization	4
CHAPTER 2. CHILD PROBLEM BEHAVIORS AND MATERNAL RISK FACTORS AND THEIR INFLUENCE ON LOW-INCOME MOTHERS' ABILITY TO ACCESS AND AFFORD CHILD CARE: THE MEDIATING ROLE OF FAMILY INCOME	6
Introduction	6
Theoretical Framework	8
Literature Review	9
Methods	19
Results	26
Discussion	28
Acknowledgements	35
References	36
CHAPTER 3. LOW-INCOME MOTHERS' EMPLOYMENT OVER TIME: THE INFLUENCE OF CHILD CARE ACCESSIBILITY AND AFFORDABILITY	58
Introduction	58
Theoretical Framework	60
Literature Review	61
Methods	74
Results	82
Discussion	84
Acknowledgements	89
References	89

CHAPTER 4: OVERALL SUMMARY	113
Review of Results	113
Policy Implications	114
Future Research	115
References	116
APPENDIX	117

LIST OF FIGURES

CHAPTER 2:	45
Figure 1. Theoretical Model	45
Figure 2. Measurement Model	46
Figure 3. SEM Testing Hypotheses 1 and 2, Accessibility	47
Figure 5. SEM Testing Hypotheses 1 and 2, Affordability	48
Figure 6. SEM Testing Hypothesis 3, Accessibility	49
Figure 7. SEM Testing Hypothesis 4, Affordability	50
 CHAPTER 3:	 100
Figure 1. Theoretical Model	100
Figure 2. Measurement Model	101
Figure 4. Structural Equation Model	102

LIST OF TABLES

CHAPTER 2:	51
Table 1. Sample Descriptives for Categorical Variables	51
Table 2. Sample Descriptives for Continuous Variables	52
Table 3. Correlations Among Study Variables	53
Table 4. Standardized Coefficients for Covariates	54
CHAPTER 3:	103
Table 1. Sample Descriptives for Categorical Variables	103
Table 2. Sample Descriptives for Continuous Variables	105
Table 3. Correlations Among Study Variables	106
Table 4. SEM Results, Hypotheses 1 and 2	109
Table 5. SEM Results, Hypothesis 3	110
Table 6. SEM Results, Hypothesis 4, Accessibility	111
Table 7. SEM Results, Hypothesis 5, Affordability	113

CHAPTER 1: GENERAL INTRODUCTION

After welfare reform was enacted in 1996, low-income women moved off the welfare rolls in record numbers and into employment (Blank & Haskins, 2002). The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) replaced the old welfare program, Aid to Families with Dependent Children (AFDC) Program with a block grant known as Temporary Assistance for Needy Families (TANF). TANF gave states more discretion in designing their own cash assistance programs, completely eliminated the federal entitlement to cash assistance and set work requirements. Additionally, PRWORA created a single block grant called the Child Care and Development Fund (CCDF) which was intended to help low-income families access and afford child care. Federal and state funding for child care increased from \$2.8 billion in 1995 to \$8.0 billion in 2000 and nearly 4.4 million preschool aged children moved into new child care settings (Fuller, Kagan, Caspary, & Gauthier, 2002). Because of the work requirements set forth by welfare reform and an increased focus on low-income families' access child care, researchers have sought to examine low-income mothers' ability to access and afford child care, the antecedents that influence their ability to access and afford child care, as well as how the inability to access and afford child care may impact their employment experiences.

In qualitative interviews, low-income women reveal that they do not have access to high quality and affordable child care (Bartle & Pearlmutter, 2003; Blalock, Tiller, Monroe, 2004; Chaudry, 2004; Edin & Lein, 1997; Fuller et al., 2002; Katras, Zuiker, & Bauer, 2004). Additionally, many low-income families are unable to find child care (regardless of quality) that is conducive to their work schedules (Chaudry, 2004; Kimmel & Powell, 2006) and low-

income neighborhoods lack formal child care facilities available for low-income mothers to choose from (Fuller, et al., 2002). Thus, finding access to child care that is of high quality and affordable is difficult for low-income families.

Several antecedents may influence low-income mothers' ability to access and afford child care. These antecedents can be broken down into two categories: 1) child problem behaviors and 2) maternal risk factors. Child problem behaviors such as internalizing and externalizing behavior problems, difficult temperament and lack of positive behaviors may influence low-income mothers' child care decisions and ability to access and afford child care include behavior. Maternal risk factors that influence low-income mothers' child care decisions include experience with domestic violence (Bell, 2003; Ellen, Scott, London, & Myers, 2002), mental health problems (Fagan, 1994; Press, Fagan, & Bernd, 2006), lack of social support (Harknett, 2006), and low levels of education (Gable & Cole, 2000; Huston, Chang & Gennettian, 2002; Johansen, Lebowitz, & Waite, 1996; Zaslow et al. 1998).

Many of the aforementioned antecedents are influenced in part by income. Low-income children are at-risk for more social-emotional problems (Duncan & Brooks-Gunn, 2000; Dearing, McCartney, & Taylor, 2001; NICHD Early Child Care Research Network, 2005). Low-income mothers are more likely to experience domestic violence (Tjaden & Thoennes, 2006; Tolman & Raphael, 2000), have mental health complications (Press et al., 2006) and be at risk for drug and alcohol abuse (Brown & Riley, 2005). Low levels of education decrease the earning power of low-income mothers and marital status influences income because the addition of a partner increases household income. However, the role that family income may play in mediating the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to access and afford child care has not

been explored in previous literature. Thus, the first study utilized Structural Equation Modeling (SEM) to examine whether income does indeed mediate this relationship.

Many of these antecedents to low-income mothers' ability to access and afford child care have also been found to be linked to their ability to obtain and maintain employment. Several studies examine how maternal employment impacts child behavior (Han et al., 2001; Joshi & Bogen, 2007; Nomaguchi, 2008; Zaslow & Emig, 1997) but this study is one of the first to examine how child behavior impacts maternal employment. In addition, maternal risk factors such as experience with domestic violence (Bell, Lohman, & Votruba-Drzal, 2006; Gibson, Magnuson, Gennetian, Duncan, & England, 2003; Lindhorst, Oxford, & Gillmore, 2007; Nam, 2005; Riger & Staggs, 2004; Tolman & Raphael, 2000; Tolman & Wang, 2005), substance abuse (Brown Riley, Danziger, Kalil, & Henderson, 2000), mental health problems (Danziger et al., 2000; Jayakody & Stauffer, 2000; Romero, Chavkin, Wise, Smith, & Wood, 2006), low levels of social support (Brown & Riley, 2005; Livermore & Powers, 2006), and low levels of education (Danziger, et al., 2000; Horowitz & Kerker, 2001) decrease the likelihood that a mother will be employed.

As previously stated, the ability to access and afford child care is meant to be a support to low-income mothers as they seek to obtain and maintain employment. However, low-income mothers in qualitative interviews report that not only do they have difficulty finding child care for their children but that the inability to access and afford child care does indeed impact their ability to obtain and maintain employment (Chaudry, 2004). Some quantitative studies examine this relationship (Herbst & Barnow, 2008) but use macro-level variables such as number of child care slots as indicators of child care accessibility instead of directly asking the mothers about their ability to access and afford child care. Furthermore,

these studies do not examine low-income mothers' ability to maintain employment over time. Thus, the second study employed Structural Equation Modeling (SEM) to examine the impact of the inability to access and afford child care on low-income mothers' employment experiences over time.

The following two studies add to the current literature on low-income families' ability to access and afford child care and low-income mothers' employment over time by using a large, longitudinal random sample to examine the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to access and afford child care, as well as how the ability to access and afford child care influences low-income mothers' employment over time. No studies have used such a rich set of contextual factors to explore these relationships. These studies also extend the current literature by utilizing a measure of child care accessibility and affordability that is based off questions directly asked to mothers. Thus, these studies provide analyses specific to mother's experiences rather than including macro-level accessibility and affordability information. Because of the aforementioned reasons, these studies give researchers and policymakers a richer understanding of low-income mothers' ability to access and afford child care and their ability to obtain and maintain employment over time.

Dissertation Organization

The organization of this dissertation follows the alternative dissertation format and includes two main chapters. Chapter 2 is titled "Child problem behaviors and maternal risk factors and their influence on low-income mothers' ability to access and afford child care: The mediating role of family income." Chapter 3 is titled, "Low-income mothers' employment over time: The influence of child care accessibility and affordability." Chapter 2

utilized Structural Equation Modeling (SEM) to examine whether family income mediated the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to access and afford child care. Chapter 3 builds upon Chapter 2 and also utilized Structural Equation Modeling (SEM) to study whether low-income mothers' ability to access and afford child care and family income mediated the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to obtain and maintain employment over time.

CHAPTER 2: CHILD PROBLEM BEHAVIORS AND MATERNAL RISK FACTORS AND THEIR INFLUENCE ON LOW-INCOME MOTHERS' ABILITY TO ACCESS AND AFFORD CHILD CARE: THE MEDIATING ROLE OF FAMILY INCOME

A paper to be submitted to *Early Childhood Research Quarterly*

Brinn Shjegstad and Brenda J. Lohman

The number of women in the United States' workforce has increased dramatically since 1960, with nearly 71% of all women now working (Bureau of Labor Statistics, 2008). Since welfare reform was enacted under the Personal Responsibility and Work Opportunity Reconciliation Act (PROWRA) in 1996 the number of low-income women entering the workforce has increased (Blank & Haskins, 2002). PROWRA required low-income women to work and set limits on the amount of time low-income families can receive welfare benefits and therefore was significantly different from the previous welfare program, Aid to Families with Dependent Children (AFDC). In an effort to support parental employment, PROWRA also created the Child Care and Development Fund (CCDF), a block grant which was intended to help low-income families access and afford child care. Total state and federal spending on child care increased from \$2.8 billion in 1995 to \$8.0 billion in 2000 and as a result an estimated 4.4 million preschool aged children moved into new child care settings (Fuller, Kagan, Caspary, & Gauthier, 2002). Therefore, policymakers and researchers have sought to understand not only whether low-income mothers are able to access and afford child care but also to understand what factors may influence their child care choices.

Qualitative research reveals that low-income women have difficulty accessing and affording quality child care (Bartle & Pearlmutter, 2003; Blalock, Tiller, Monroe, 2004; Chaudry, 2004; Edin & Lein, 1997; Fuller et al., 2002; Katras, Zuiker, & Bauer, 2004).

Additionally, research shows that several antecedents may impact low-income mothers' child care decisions and ability to access and afford child care. These antecedents generally fall into two different categories, child problem behaviors and maternal risk factors. Child problem behaviors include externalizing and internalizing behavior, difficult temperament, and lack of positive behaviors. Extant literature has yet to study these characteristics, thus this study is one of the first to examine how a collection of child problem behaviors influence low-income mothers' child care decisions. Maternal risk factors include experience with domestic violence (Bell, 2003; Ellen, Scott, London, & Myers, 2002), mental health problems (Fagan, 1994; Press, Fagan, & Bernd, 2006), lack of social support (Harknett, 2006), low education levels (Gable & Cole, 2000; Huston, Chang & Gennetian, 2002; Johansen, Lebowitz, & Waite, 1996; Zaslow et al. 1998), and ethnicity (Early & Burchinal, 2001; Fuller, Holloway, & Liang, 1996). Additionally, this study included substance abuse as a maternal risk factor that may influence low-income mothers' ability to access and afford child care but it has not been explored in previous studies.

The child problem behaviors and maternal risk factors described above are influenced in part by family income. For example, in comparison to higher income children, low-income children are at higher risk for social-emotional problems (Duncan & Brooks-Gunn, 2000; Dearing, McCartney, & Taylor, 2001; NICHD Early Child Care Research Network, 2005). In addition, low-income mothers are more likely to experience domestic violence (Tjaden & Thoennes, 2006; Tolman & Raphael, 2000), have mental health complications (Press et al., 2006), and be at risk for drug and alcohol abuse (Brown & Riley, 2005). Low levels of education decrease the earning power of low-income mothers and the presences of a spouse or partner increases household income. Welfare and child care assistance are intended to

support the employment goals of low-income women. Hence, when examining the influence that child and maternal characteristics have on low-income mothers' ability to access and afford child care, the role of family income is an important mediating variable to consider.

The purpose of this study was to utilize Structural Equation Modeling (SEM) to examine the influence of child problem behaviors and maternal risk factors on low-income mothers' ability to access and afford child care. Additionally, this study examined whether family income mediates this relationship.

Theoretical Framework

The theoretical framework used for this study is Bronfenbrenner's bioecological theory of human development. Bronfenbrenner's (1989) theory stresses the importance of the various environments in which a person develops and the impact of the interaction of these environments on development. Bronfenbrenner posits that individuals develop within families and families develop within communities. Essential to Bronfenbrenner's theory are the components of proximal processes, person characteristics, context, and time (Bronfenbrenner & Morris, 1998). Proximal processes are the basic interactions between a person and their environment and person characteristics influence whether or not certain proximal processes will occur. This study looked at how person characteristics such as child problem behaviors and maternal risk factors present in low-income mothers' environments influence their ability to access and afford child care.

Proximal processes occur in context. Bronfenbrenner proposes four hierarchical environmental systems as contexts in which individuals develop. First is the *microsystem*, which contains the immediate environments in which a person interacts, such as family and neighborhood. Second is the *mesosystem*, which contains the interaction of two different

systems such as the interaction between family and neighborhood. Third is the *exosystem*, which contains people and places that are not within a person's immediate environment but still impact development such as the media, church, and extended kin. Last is the *macrosystem*, which includes broader societal influences on a person's development such as values, customs, and laws.

It was beyond the scope of this current study to examine the exosystem and macrosystem. This study examined two microsystems- child and maternal and their influence on low-income mothers' ability to access and afford child care. See Figure 1. This study also does examine the fourth component of Bronfenbrenner's theory, time. Time refers to how a person to the experiences of a person over time. This study only uses one time point of data collection.

Literature Review

Child Microsystem

Child Problem Behaviors

Research has found that behavior problems are common among low-income children. Indeed, poverty has a negative impact on both the cognitive and social-emotional development of children especially when children experience poverty in early childhood (Duncan & Brooks-Gunn, 2000; Dearing, McCartney, & Taylor, 2001; NICHD Early Child Care Research Network, 2005). However, experiences in child care can either help or exacerbate the influence that poverty has on children's social-emotional development.

In studies of children from a wide-range of socioeconomic backgrounds, more hours in child care has been linked to more externalizing behavior in children (NICHD, 2003). In contrast, in a study of low-income children Votruba-Drzal and colleagues (2004) found that

child care was positively associated with children's social-emotional development 16-months later regardless of hours in care. However, no research has examined how child behavior may impact access to child care; thus this study will fill the void by including child behavior as a factor that may impact low-income mothers' ability to access and afford child care. It was hypothesized that mothers who have children with higher levels of behavior problems would have more difficulty accessing and affording child care. The current study used several measures of child problem behaviors including child behavior (both internalizing and externalizing behavior), difficult temperament, and lack of positive behaviors.

Maternal Microsystem

There are several maternal risk factors that also influence low-income mothers' ability to access and afford child care. Among these are experiences with domestic violence, substance abuse, mental health problems, and lack of social support. These factors were considered part of the maternal microsystem.

Domestic Violence

Low-income women are particularly at risk for experiencing domestic violence (Tolman & Raphael, 2000). Tjaden and Thoennes (2006) indicated that among women on welfare the rate of domestic violence is three times that of women in the general United States population. As welfare reform was enacted, policymakers and researchers became concerned with how domestic violence may influence the transition from welfare to work among low-income women.

A less explored link in the domestic violence and employment literature is the impact that domestic violence may have on low-income women's ability to access child care. As stated previously, in order for low-income women to sustain employment they often must secure

some type of child care arrangements for their children. The available literature on this topic shows that some women may stay in an abusive relationship because their partner is someone who can be counted on to help with child care if and when the mother secures employment (Bell, 2003, Ellen, Scott, London, & Myers, 2002). Conversely, if a woman decides to leave an abusive relationship, the loss of the partner may mean the loss of an additional person to count on for child care which may then affect the mother's ability to secure employment. For example, Ellen and colleagues (2002) found that women who were in an abusive relationship stayed with their partners because in order to work they needed to rely on that partner for child care. Similarly, Bell (2003) in a qualitative study of low-income women in abusive relationships found that nearly all of the study participants described finding child care as a barrier to securing employment. The women in the study worked non-standard work hours, thus making it difficult to find formal child care arrangements (i.e. centers and family child care homes). They therefore had to rely on their abusive partners to help with child care. In sum, low-income women who experience domestic violence may stay in abusive relationships because they need their partner to help with child care responsibilities. Therefore domestic violence was used in the current study as a measure of maternal risk factors that was hypothesized to negatively influence low-income mothers' ability to access and afford child care.

Substance Abuse

No studies have examined how substance abuse may influence low-income mothers' ability to access and afford child care. This study will be among the first to examine this relationship. It was hypothesized that substance abuse would have a negative effect on low-income mothers' ability to access and afford child care. For example, mothers with substance

abuse problems may be spending their money to purchase drugs and/or alcohol and thus may not have enough money to afford child care. Additionally, the emotional and physical effects of substance abuse may impair mothers' ability to make decisions about their children's child care options. Therefore, this study included substance abuse as a measure of the latent construct, maternal risk factors.

Mental Health

Mental health problems are common among low-income women. According to Press and colleagues (2006), rates in this population have been estimated to be high as 60% while mental health problems among women in the general U.S. population are estimated at 19%. Researchers who have examined the prevalence of mental health issues among low-income women have concluded that the environment created by living in poverty often causes stress which leads to mental health problems (Press, Fagan, & Bernd. 2006).

A less frequently studied aspect in the literature on mental health is how mental health may influence a low-income woman's ability to access child care. However, the studies that do exist show that the burden of trying to access child care may exacerbate or contribute to mental health problems among low-income women (Press et al., 2006). Early studies show that low-income women who have children that participate in Head Start have lower rates of depression and that observed quality child care including more caregiver sensitivity and responsiveness are associated with less feelings of loneliness among mothers (Fagan, 1994). Furthermore, Press and colleagues (2006) in a study of low-income women found that when low-income women are dissatisfied with their current child care arrangements they have increased levels of depressive symptoms. Hence, the authors concluded that inadequate child care or instability in child care arrangements increased the

likelihood that low-income women will have mental health problems. What has not been explored is whether mental health problems influence low-income mothers' ability to access and afford child care. Thus, this study included mental health as a measure of maternal risk factors that may influence low-income mothers' ability to access and afford child care.

Lack of Social Support

Social support includes material and emotional support received from relatives, friends, and neighbors (Harknett, 2006). The importance of social support in the lives of low-income women is well documented. Several studies show the importance of social support networks to the economic well-being of low-income families and their daily lives (Ames, Brosi, & Damiano-Teixeira, 2006; Harknett, 2006; Henly, Danzinger, & Offer, 2005). Social support may also be instrumental in helping low-income women find child care. Since low-income women tend to work informal hours, the presence of a social network may offer low-income women the flexibility and ability to rely on informal care from people within the social network to care for their children (Harknett, 2006). Therefore, lack of social support was included as an indicator of a maternal risk factor that influences low-income mothers' access to child care.

Mediating Role of Income

As stated previously, low-income women in particular report difficulties accessing and affording child care (Bartle & Pearlmutter, 2003; Blalock et al., 2004; Chaudry, 2004; Edin & Lein, 1997; Fuller et al., 2002; Katras, et al., 2004). Generally, low-income women are more likely to choose informal child care arrangements such as relative care for their children (Fuller et al., 2002; Huston et al., 2002). However, these arrangements are typically seen as unstable (Fuller et al., 2002), which can indeed influence low-income mothers'

access to child care. Studies estimate that working families spend about 23% of their annual income on child care expenses (Ginnarelli & Barsimantov, 2000), and some suggest that this percentage may be even greater for families who have a single working mother (Fuller et al., 2002). Conversely, upper-and middle-income families spend a smaller percentage of their income on child care (Ginnarelli & Barsimantov, 2000). Thus it is also important to consider the role that income has on low-income mothers' ability to access and afford child care.

The aforementioned child problem behaviors and maternal risk factors that influence low-income mothers' ability to access and afford child care are also influenced by the family income. Low-income children are more likely to have social-emotional problems (Dearing, McCartney, & Taylor, 2001; NICHD, 2005). Low-income mothers are more likely to experience domestic violence (Tjaden & Thoennes, 2006; Tolman & Raphael, 2000), have mental health complications (Press et al., 2006) and be at risk for drug and alcohol abuse (Brown & Riley, 2005). Hence, this study examined the mediating role that family income plays between child problem behaviors and maternal risk factors and their influence on low-income mothers' ability to access and afford child care.

Covariates

Welfare Receipt

Since welfare reform was enacted in 1996, over four million children have moved off of the welfare rolls (Lindsey & Martin, 2003) and over one million preschool children moved into new child care settings between 1996 and 1998 (Fuller et al., 2002). Additionally, total state and federal funding for child care increased from 2.8 billion dollars in 1995 to 8 billion dollars in 2000 (Fuller et al., 2002). Since a major plank of welfare reform was work requirements and time limits, finding adequate and accessible child care is particularly

important for low-income mothers receiving TANF (Temporary Aid to Needy Families) because it helps them secure and sustain employment (Cabrera, Hutchens, Peters, 2006). In a study of low-income women on welfare, Coley and colleagues (2006) found that recent leavers of welfare (within past two years) had the most difficulty accessing child care compared to those who were currently on welfare highlighting the need for flexible and accessible child care for families making the transition from welfare to work.

Number of Children

The number of children a family has impacts a family's ability to access and afford child care. Generally, parents prefer to place all their children with the same child care provider (Harris, et al., 2002) making it important to find child care arrangements that will accept multiple children from one family. Additionally, more children in child care equals more money in child care expenditures, making it difficult for many low-income families with multiple children to afford child care arrangements. Indeed, studies show that low-income families with multiple children have difficulty accessing child care and report more difficulty with their child care arrangements (Huston et al., 2002).

Child Care Subsidy

There is a robust literature on the role that child care subsidies have in helping low-income mothers secure employment as well as influences their child care choices. Child care subsidies are designed to support parental employment by enabling low-income parents to purchase child care that allows them the flexibility to meet their employment demands. In 2008, nearly five billion dollars was allocated for child care subsidies (Administration for Children and Families [ACF], 2008).

Press and colleagues (2006) in a study on work-related problems caused by the inability to arrange child care found that mothers who used child care subsidies were less likely to report work-related problems caused by the inability to arrange child care. For example, mothers who used child care subsidies were less likely to report not working more hours per week because of the inability to arrange child care. Likewise, Brooks (2002) found that parents who receive child care subsidies are more likely to have stable child care arrangements as well as be more satisfied with their child care arrangements. Findings by Huston et al. (2002) echo these findings; use of child care subsidies results in more stable child care arrangements for low-income families. Several other studies show that parents who use subsidies are more likely to use center-based care (considered to be more stable) than informal child care arrangements (Huston et al. 2002; Rigley, Ryan, & Brooks-Gunn, 2007).

Child Sex

There are no consistent findings regarding the influence of child sex on parents' child care selections (Hiedman, Joesch, & Rose, 2004; NICHD). This study explored this relationship further and hypothesized that there was no significant relationship between child sex and child care accessibility and affordability.

Education

Maternal education influences the type of child care that low-income mothers select. Mothers with lower levels of education are more likely to choose informal child care such as relative care (Gable & Cole, 2000; Huston, Chang & Gennetian, 2002; Johansen, Lebowitz, & Waite, 1996; Zaslow et al. 1998) and place less emphasis on the educational components of child care (Gable & Cole, 2000; Zaslow et al. 1998). However, Coley and colleagues

(2006) point out that what may appear to be preferences for a certain type of care by low-income families may actually reflect difficulty in accessing and affording child care. Low-income women are more likely to have lower levels of education compared to middle-and-upper income women. Therefore, mothers with lower levels of education may not have access to formal child care options and therefore use informal arrangements that are more unstable.

Ethnicity

The type of child care low-income mothers choose for their children varies by ethnicity. Generally, Hispanic families are less likely to be in formal child care arrangements such as center-based child care in comparison to Non-Hispanic White and African-American children (Fuller, Holloway & Liang, 1996) while African-American preschoolers are most likely to be in center-based care (Early & Burchinal, 2001). However, as Coley and colleagues (2006) point out it is important to further understand whether these differences occur because of mothers' preferences for child care or if it is a reflection of the inability to access and afford child care.

Family Structure

Family structure is important to consider when examining low-income women's access to child care. The addition of another person in the house such as a father or partner represents another person who is able to provide child care while the mother works. Research shows that when such a person is present, that person is likely to care for the children in the household while the mother is employed (NICHD, 1997; Huston et al., 2002) and enables the family to have more stability in their child care arrangements (Harris, Raley, & Rindfuss, 2002).

Central Aim and Hypotheses

The purpose of this study was to examine the impacts of child problem behaviors and maternal risk factors on low-income mothers' ability to access and afford child care.

Additionally, whether family income mediates the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to access and afford child care was examined. Based on the aforementioned theoretical framework and literature review, the following three hypotheses were proposed:

1. Child problem behaviors, measured as a latent construct by higher levels of child behavior, difficult temperament, and lack of positive behaviors would be negatively related to low-income mothers' ability to access and afford child care.
2. Maternal risk factors, measured as a latent construct by domestic violence, mental health problems, and lack of social support would be negatively related to low-income mothers' ability to access and afford child care.
3. Family income would mediate the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to access and afford child care.

This study adds to the existing literature on low-income mothers' ability to access and afford child care by examining the influence that child problem behaviors and maternal risk factors have on low-income mothers' ability to access and afford child care. Furthermore, this study examined whether family income mediates the direct relationship between these variables, thus giving a more complex and rich understanding of this relationship.

While this study has several strengths, it also has limitations. One of the limitations of this study is that the sample is composed of predominately low-income families and therefore

the results of the study will not be able to be generalized to middle-and upper-income families. This current study only utilized cross-sectional data, thus this study is unable to draw any longitudinal implications. Additionally, this study did not examine nonstandard working hours as a variable that may influence low-income mothers' ability to access and afford child care.

Methods

Sample

Data came from Wave 1 of the survey component and Embedded Development Study (EDS) of *Welfare, Children, & Families Study: A Three-City Study*. Forty-thousand households were screened (90% screening rate) in 1999) by professionally trained interviews. Households with incomes below 200% of the poverty line and who had a child between 0 and 4 or 10 and 14 years in 1999 were eligible for the study. Out of those families eligible for the study, a random sample was drawn and of those families selected to participate, interviewers randomly selected one focal child per family, and invited the focal child and his or her primary female caregiver to participate. Data from the survey were collected at three different waves, in 1999, 2001, and 2005. The overall response rate was 88% for the second wave of data collection. This study utilized one wave of survey data, collected in 1999.

Families with children aged 2-4 years at Wave 1 were eligible to participate in a more in-depth developmental study, the Embedded Developmental Study (EDS; $N = 737$; 85% response rate. About 51% of children who participated in the EDS experienced non-maternal child care settings (Votruba-Drzal, Coley, Mandonand-Carreno, Li-Grining, & Chase-Lansdale, In Press). Data from families who had a child age 2-4 years ($M = 3.05$, $SD = .81$) at

Wave 1, participated in the EDS and experienced regular non-maternal child care ($N = 320$) were utilized. See Table 1 for a complete demographic description of the sample and Table 2 for descriptive information on continuous study variables. See Table 3 for a table of correlations among study variables. All measures utilized came from Wave 1 of data collection. Child care was defined as any non-maternal care setting including centers, family child care, relative care (both in-home and out-of-home) and non-relative care (both in-home and out-of-home).

Procedure

For the survey component of the *Three-City Study*, professionally trained interviewers completed interviews with children and their caregivers in the families' home. Mothers participated in 2-hour interviews covering topics such as child care, family structure, education, income, experiences with welfare, and employment experiences. The same set of questions was asked at each wave. For a detailed description of the study see Winston et al., (1999). Mothers completed surveys using a Computer Assisted Personal Interview (CAPI) in which interviewers can enter survey information into a laptop computer. An Automated Computer Assisted Survey Interview (ACASI) was also used when mothers answered questions related to sensitive subjects such as substance abuse, domestic violence, and illegal drug use. Mothers answered questions directly into a laptop computer while listening to questions on headphones. Studies show that using ACASI increased the validity of the responses dealing with sensitive topics (Turner et al., 1998). Caregivers received \$35 for participating in the interview, while a small subsample of caregivers received \$75. The higher incentives only had a small impact on response rates (E. Cherlin, personal communication, October 9, 2009). Eight-two percent of families who received higher

incentives were re-interviewed at Wave 3, while 78.4% of families who received lower incentives were re-interviewed at Wave 3. The study was approved by the Institutional Review Board (IRB). See Appendix A for IRB documents.

The EDS was composed of an additional survey for mothers, which included questions on child care accessibility and affordability, child temperament, and work-life balance (85% response rate). Mothers went through an additional 1 hour interview to answer survey questions.

Measures

Dependent Variable

Child Care Accessibility and Affordability. At Wave 1 during the EDS survey component, mothers were asked about their ability to access and afford child care. Two composite measures were constructed; one for accessibility and one for affordability (Coley, et al., 2006). The accessibility composite consisted of the mean score of 10 items that ask mothers about their experiences in finding child care, for example if transportation was a problem in looking for child care. A four-point Likert scale was utilized to answer the questions (*1 = strongly disagree to 4 = strongly agree*). Higher composite scores reflect greater child care accessibility ($\alpha = .59$). The affordability composite consisted of the mean score of four items that ask mothers about their ability to afford child care. A four-point Likert scale was utilized to answer the questions (*1 = strongly disagree to 4 = strongly agree*). A higher composite score reflects greater ability to afford child care ($\alpha = .60$). See Appendix A for a full description of these scales.

Independent Variables

Child Microsystem

Child Behavior. The Child Behavior Checklist 2/3 and 4/18 (CBCL; Achenbach, 1991, 1992) was used as measure of children's behavior problems. The CBCL was completed by the child's primary caregiver. The CBCL is composed of 118 items related to children's behavior problems. Questions ask about specific behavioral and emotional problems such as how well child gets along with others. Items are scored on a three-point scale with 1 = *not true*, 2 = *sometimes true*, and 3 = *often true*. The CBCL measures both internalizing and externalizing behavior. Scores were created using the methods recommended by the scales authors and converted to t-scores. The total behavior score which includes both externalizing and internalizing behavior were used for this study ($\alpha=.95$). The content, construct and criterion validity of these measures is documented in the CBCL manuals and all have been found to good (Achenbach 1991, 1992).

Difficult Temperament. The emotionality subscale from the Emotionality, Activity, Sociability and Impulsivity (EASI) Temperament Scale was used to measure children's temperament (Buss & Plomin, 1975; $\alpha=.69$). The subscale consists of the mean of four items related to children's emotionality. Items are scored on five-point scale with 1 = *never like this child*, 2 = *rarely like this child*, 3 = *sometimes like this child*, 4 = *often like this child*, and 5 = *always like this child*. Higher scores reflect higher levels of emotionality problems.

Lack of Positive Behaviors. The Positive Behavior Scale was used to measure children's positive behaviors (Quint, Bos, & Polit, 1997; $\alpha=.72$). The scale consists of the mean of six items scored on a five-point scale with 1 = *not at all like this child*, 2 = *a little like this child*, 3 = *somewhat like this child*, 4 = *a lot like this child*, and 5 = *completely like*

this child. Scores were reverse-coded so higher scores reflect lack of positive behaviors.

Modest construct validity has been found for this measure among both high and low-income children (Epps, Park, Huston, & Ripke, 2003).

Maternal Microsystem

Domestic Violence. Mothers used ACASI at Wave 1 to report their experiences with domestic violence, including both psychological and physical violence using a shortened version of the Conflict Tactics Scale (CTS; Straus, 1979). A mean composite score was created from 13 items in which mothers used a 4-point Likert scale ($1 = \text{never}$ to $4 = \text{often}$; $\alpha_{W1} = .90$) to rate their experiences with domestic violence. Scores were logged and square rooted to adjust for skewness. The CTS has been used widely on populations from diverse backgrounds and has been found to be a reliable and valid measure (Straus, 1990).

Substance Abuse. Mothers used ACASI at Wave 1 to report on their illegal drug and alcohol use. Mothers answered a shortened version of the substance abuse scale used by the National Longitudinal Survey of Youth (NLSY; Borus et al., 1982). A mean composite score was created for each wave from four items in which mothers used a 4-point Likert scale ($1 = \text{never}$ to $4 = \text{often}$; $\alpha_{W1} = .45$) to rate their experiences with drug and alcohol use over the past year. Harford and Grant (1994) found the measure to have adequate population validity.

Mental Health Problems. The Brief Symptoms Inventory 18 (BSI-18; Derogatis, 2000) was used to assess mothers' mental health problems. The BSI-18 is composed of 18 questions that cover symptoms of somatization, anxiety, and depression. Scores were averaged and then converted to t-scores following the scale's author's requirements. Responses to questions were coded 0-4 ($0 = \text{not at all}$, $4 = \text{extremely}$). The BSI-18 has been

found to have construct and content validity among low-income women (Prelow, Weaver, Swenson, & Bowman, 2005).

Lack of Social Support. This study used social support as measured at Wave 1 of data collection. Mothers were asked four questions regarding social support: 1) whether the mother had others for emotional support; 2) whether the mother had others to care for children; 3) whether the mother had others to ask for small favors; and 4) whether the mother had others to help with emergency loans. Responses to the social support network were coded as 1 (*enough people*), 2 (*too few people*), and 3 (*no one*). A composite social support score was computed using the average of the responses to the four questions with higher composite scores indicating greater need for social support ($\alpha = .79$).

Mediating Variable

Total Household Income. Mothers were asked about their income during the two-hour interview. Total income is a cumulative number consisting of the previous month's income (before taxes and deduction) plus the following: unemployment insurance, food stamps, Supplemental Security Income (SSI), cash, welfare payments, child support payments, Social Security disability, worker's compensation/other disability, Social Security retirement or survivor payments, other pension or retirement income, and income from relatives/friends. Maternal earnings and a measure of income-to-needs were also tested as an indicator of family income. Findings were robust across indicators of family income and thus total household income was used as the final indicator of family income in this study.

A measure of total household income was utilized because it may give a more accurate picture of income because it includes all sources. For example, if a family is receiving food stamps, money that may have been spent on food can be used for other

household needs such as child care. Another example is that some families may receive money from family and friends that can be utilized to buy household needs such as child care. Hence, total household income accounts for all possible sources of income that may be available for families to use to purchase child care.

Covariates

Welfare Status. Families' welfare experiences were obtained at Wave 1 via maternal reports. The variable was dummy coded (1,0), currently on welfare (1) and currently not on welfare (0).

Number of Children. Mothers were asked about how many children under the age of 18 currently live in the household. Total number of children under the age of 18 was used to create this variable.

Child Care Subsidy Receipt. This study used subsidy receipt from Wave 1 of data collection. Mothers were asked if they received help in the previous week paying for child care. Responses were coded 1 if the mother received help in the previous week paying for child care from the federal/state government and 0 if they did not.

Child sex (1 = male, 0 = female) was obtained at Wave 1 and was used in the current study.

Maternal Education. Maternal education from the Wave 1 was coded into three different categories. Categories were dummy coded (1, 0) using the highest level of education the mother had received by Wave 1: 1) higher than a high school education; 2) high school education; and 3) no high school education. The referent group used in the analyses was mothers with an education higher than a high school degree.

Maternal Ethnicity. Mothers' ethnicity and was obtained at Wave 1. Mothers' ethnicity was be coded into three dummy categories (1, 0): 1) Hispanic; 2) African American; and 3) Non- Hispanic White; African Americans was used as the referent group.

Family Structure. Family structure from Wave 1 was used. At Wave 1, mothers were asked about their current family structure. Family structure was coded into two categories: a) married or cohabitating (1); and b) not married nor cohabitating (0).

City. City was used as a covariate in the current study. This variable was coded into three dummy categories (1, 0): 1) Boston; 2) Chicago; and 3) San Antonio; San Antonio was used as the referent group.

Results

First, it was hypothesized that child problem behaviors, measured as a latent construct by higher levels of child behavior problems, difficult temperament, and lack of positive behaviors would be negatively related to low-income mothers' ability to access and afford child care. Second, it was hypothesized that maternal risk factors, measured as a latent construct by exposure to domestic violence, mental health problems, and lack of social support would be negatively related to low-income mothers' ability to access and afford child care. Third, it was hypothesized that family income would mediate the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to access and afford child care.

To assess these hypotheses models were tested in MPLUS. First, prior to testing any of the hypotheses, a measurement model was conducted on the two latent constructs using confirmatory factor analysis in order to determine model fit. Results showed that the measurement model was a good fit for the data ($CFI = .97$; $RMSEA = .03$) and all measured

variables loaded significantly on the latent constructs and all coefficients were above .30. See Figure 2. Second, the first and second hypotheses were tested utilizing SEM to assess the relationship between child problem behaviors and maternal risk factors and child care accessibility and affordability. This model was run two times; once with child care accessibility as the outcome and once with child care affordability as the outcome. Third, to test the third hypothesis, family income was added to the SEM model in order to assess whether family income mediated the relationship between child problem behaviors and maternal risk factors and child care accessibility and affordability. This model was run two times; once with child care accessibility as the outcome and once with child care affordability as the outcome. Models were evaluated using the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA; Leventosky, Leahy, Bogat, Davidson, & von Eye, 2006). Acceptable values for CFI are greater than 0.9 and for RMSEA are less than 0.05.

Hypotheses One and Two

The first and second hypotheses were tested by assessing the relationship between child problem behaviors and maternal risk factors and child care accessibility and affordability. Results showed that higher levels of maternal risk factors were significantly related to a decreased ability to access ($\beta = -.25, p < .01$) and afford child care ($\beta = -.27, p < .01$). See Figures 3 and 4. No covariates were significantly related to child care accessibility (See Table 4). However, families on welfare were more likely than those off of welfare to report an increased ability to afford child care ($\beta = .10, p < .05$). See Table 4. Tests of model fit showed a good model fit ($CFI = 1.00, RMSEA = .00$).

Hypothesis Three

The third hypothesis was tested by assessing the relationship between child problem behaviors and maternal risk factors and child care accessibility and affordability and whether family income mediated this relationship. Results showed that family income was not directly related to child care accessibility and affordability, nor indirectly. In other words, family income did not mediate these relationships. Specifically, the coefficients remain relatively unchanged from the coefficients in the models used to test hypotheses one and two.. See Figures 5 and 6.

Discussion

This study adds to the existing literature on low-income mothers' ability to access and afford child care by examining the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to access and afford child care. Furthermore, this study examined whether family income mediates the relationship between these variables, thus giving a more complex and rich understanding of this relationship.

While child problem behaviors were not significantly related to low-income mothers' ability to access and afford child care, more maternal risk factors were. These findings lend support to Bronfenbrenner's theory, that in order to understand the factors that influence low-income mothers' ability to access and afford child care, it is imperative to examine the influence of several microsystems. A comparison of these results with prior research, limitations of the current study, future directions for research, and policy implications are discussed.

Discussion of Results

The findings help give a better understanding of prior qualitative research in which low-income mothers report they have difficulty accessing and affording child care (Chaudry, 2004). By utilizing a quantitative measure of child care accessibility and affordability, this study sheds light on the factors that influence low-income mothers' ability to access and afford child care. These findings also give a better understanding to prior research that utilizes macro-level variables (number of child care slots) as an indicator of child care accessibility to show low-income mothers' inability to access and afford child care (Herbst & Barnow, 2008). By directly asking mothers about their ability to access and afford child care, these results validate on an individual, maternal level, the findings of studies that use macro-level indicators of child care accessibility and affordability. Additionally, the findings of this study show that micro-level variables, such as maternal risk factors, also play an important role in low-income mothers' ability to access and afford child care.

Consistent with the stated hypothesis, low-income mothers with more risk factors were significantly less likely to report the ability to access and afford child care. Risk factors were measured as a latent construct by domestic violence, mental health problems, substance abuse, and lack of social support. The current study used experiences with domestic violence as a maternal risk factor that may influence low-income mothers' ability to access and afford child care. Mothers who experience domestic violence may be impaired in their ability to access and afford child care because of the emotional, relationship, and familial instability caused by domestic violence. This instability may impact their judgments regarding child care decision-making. It also may be that mothers who experience domestic violence choose

to leave the abusive partner, thus losing a person who can help with child care. Previous research suggests low-income women may stay in an abusive relationship because the partner is needed to help with child care (Bell, 2003; Ellen et al., 2002) and therefore it is plausible that women who leave a relationship because of domestic violence have difficulty accessing and affording child care because of the loss of the partner.

How maternal substance abuse impacts mothers' ability to access and afford child care has not been previously studied and therefore this study is the first to show that when substance abuse is used as a measure of maternal risk factors, the maternal risk factors impede low-income mothers' ability to access and afford child care. Mothers with substance abuse problems may not have the money to pay for child care because family income is being used to purchase drugs and/or alcohol. Furthermore, mothers who have substance abuse problems may have difficulty making child care decisions due to impaired judgment caused by substance abuse.

Previous studies have shown that mental health problems among low-income women may be influenced by their inability to access and afford child care (Fagan, 1996; Press et al., 2006). This study examined the opposite relationship and used mental health problems as an indicator of maternal risk factors and then examined the relationship between maternal risk factors and low-income mothers' ability to access and afford child care. Results showed maternal risk factors significantly related to low-income mothers' ability to access and afford child care; therefore mothers who have mental health problems may be unable to make decisions regarding child care for their children. Mental health problems may influence their

ability to find resources about child care assistance and referral and public child care programs such as Head Start that may help their ability to access and afford child care.

Last, this study builds upon previous research that shows the importance of social support to the economic well-being of low-income families and their daily lives (Ames, Brosi, & Damiano-Teixeira, 2006; Harknett, 2006; Henly, Danzinger, & Offer, 2005). Utilizing lack of social support as one measure of maternal risk factors, showed maternal risk factors were significantly related to low-income mothers' ability to access and afford child care. Mothers who have low levels of social support may not have friends and family who can watch their children when formal child care arrangements fall through and may not have friends or family who can help them pay for child care if and when they would need help.

Contrary to the stated hypotheses, child behavior problems were not significantly related to low-income mothers' ability to access and afford child care. Low-income mothers with children who have behavior problems may be more likely to qualify for programs such as Head Start or state-funded pre-kindergarten programs and therefore do not report difficulty accessing and affording child care. Research suggests that high quality child care is particularly important to reducing low-income children's behavior problems (Votruba-Drzal et al., 2004; Votruba-Drzal et al., In Press). Hence, low-income children experiencing high quality child care settings such as Head Start are not showing behavior problems and therefore mothers of these children are not reporting an inability to access and afford child care. Another reason this hypothesis may have not been supported is that families who use relative care may not have to worry about the inability to find child care as a relative may be more likely to start or continue care for a child that experiences behavior problems.

Also contrary to the stated hypotheses, family income did not mediate the relationship between child care problems and maternal risk factors and low-income mothers' ability to access and afford child care. While child behavior problems, maternal risk factors, and child care accessibility and affordability are influenced by family income, the impact of child care problems and maternal risk factors on child care accessibility and affordability is not mediated by family income. Rather than a mediating factor, family income may work as a predictor of child problem behaviors and maternal risk factors. As stated in the literature review, low-income children are more likely to have behavior problems and income greatly influences the likelihood that low-income mothers experience domestic violence, have mental health and substance abuse problems, and have a lack of social support. Hence, family income does not work as a mediator but as a predictor of maternal risk factors and maternal risk factors in turn influence low-income mothers' ability to access and afford child care. Additionally, the sample used in this study was predominately low-income and therefore there may not be enough variability in family income to mediate the relationship between child problem behaviors and maternal risk factors and child care accessibility and affordability.

Limitations and Future Directions

One of the limitations of this study is that the sample is composed of predominately low-income families and therefore the results of the study are not generalizable to middle- and upper-income families. This current study only utilized cross-sectional data, thus this study is unable to draw any longitudinal implications. Additionally, this study did not examine nonstandard working hours as a variable that may influence low-income mothers'

ability to access and afford child care. Another limitation is that there may be shared method variance among the reports of child problem behaviors and maternal risk factors as they all utilize maternal report. For example, a woman with greater mental health problems may also report higher behavior problems for her child.

Future research on low-income mothers' ability to access and afford child care should include nonstandard working hours as a variable. Because many low-income mothers work non-standard working hours and many child care facilities are not open during nonstandard working hours, this variable may significantly impact low-income mothers' ability to access child care. Future research should also include another level of variables that may influence low-income mothers' ability to access and child care. The need to examine child, maternal and more macro-level variables (see Herbst & Barnow, 2008) such as number of child care slots in a given area should be examined simultaneously with micro-level variables such as maternal risk factors in order to gain a richer understanding of low-income mothers and their experiences accessing and affording child care.

Future research should also examine micro-level child characteristics such as child age and ethnicity differences in low-income mothers' ability to access and afford child care. For example, Preschool aged children may be more likely to qualify for publicly funded pre-kindergarten programs than infants and toddlers and therefore mothers may report greater access to child care if their children participate in these programs (Dowsett, Huston, Imes, & Gennetian, 2008). Furthermore, type of child care selection varies by family ethnicity which may influence the ability to access and afford child care (Fuller et al., 1996). For example, Hispanic families are more likely to utilize relative care which may not be as difficult to access and afford as center-based care. Last, future research should examine urban/rural

differences in low-income mothers' ability to access and afford child care. This current study utilized an urban sample of low-income families and future research should assess whether child care accessibility and affordability is different for rural families. In rural areas, the availability of child care may be much less than that in urban areas thus affecting low-income mothers' ability to access child care.

Policy Implications

Many proposals that are intended to increase low-income mothers' ability to access and afford child care focus predominately on increasing child care subsidies and the supply of quality childcare facilities in low-income neighborhoods. The findings of this study suggest that the problem of accessing and affording child care for low-income mothers must be examined through multiple-contexts. While it is important to focus on macro-level variables such as policies regarding child care subsidies and child care supply, micro-level variables should be considered in policies geared toward increasing low-income mothers' ability to access and afford child care. In particular, policymakers and researchers should also focus on maternal risk factors that may influence mothers' ability to access and afford child care. Policymakers and researchers that are interested in reducing high levels of domestic violence exposure, substance abuse, and mental health problems among low-income mothers should be cognizant of the finding that reducing these problems also has an influence on low-income mothers' ability to access and afford child care. Likewise, policymakers and researchers interested in low-income mothers' ability to access and afford child care should be cognizant of the finding that micro-level variables such as maternal risk factors also influence low-income mothers' ability to access and afford child care. Thus, current and future policies targeted toward reducing these maternal risk factors should include as part of

their benefits the relationship between reducing maternal risk factors and low-income mothers' ability to access and afford child care. Current and future policies targeted toward increasing low-income mothers' ability to access and afford child care should include reducing maternal risk factors as part of an overall, comprehensive strategy that includes macro-and micro-level variables that increase low-income mothers' ability to access and afford child care.

Acknowledgements

We gratefully acknowledge the support of the following organizations. Government agencies: National Institute of Child Health and Human Development (RO1 HD36093 “Welfare Reform and the Well-Being of Children”), Office of the Assistant Secretary of Planning and Evaluation, Administration on Developmental Disabilities, Administration for Children and Families, Social Security Administration, and National Institute of Mental Health. Foundations: The Boston Foundation, The Annie E. Casey Foundation, The Edna McConnell Clark Foundation, The Lloyd A. Fry Foundation, The Hogg Foundation for Mental Health, The Robert Wood Johnson Foundation, The Joyce Foundation, The Henry J. Kaiser Family Foundation, The W.K. Kellogg Foundation, The Kronkosky Charitable Foundation, The John D. and Catherine T. MacArthur Foundation, The Charles Stewart Mott Foundation, The David and Lucile Packard Foundation, Searle Fund for Policy Research, and The Woods Fund of Chicago. A special thank you is extended to our research firm, Research Triangle Institute (RTI) as well as to the children and caregivers who graciously participated in the *Three-City Study* and gave us access to their lives.

References

- Achenbach, T. M. (1992). *Manual for Child Behavior Checklist/2-3 and 1992 Profile*. Burlington: University of Vermont, Department of Psychiatry.
- Ames, B. D., Brosi, W. A., & Damiano-Teixiera, K. M. (2006). "I'm just glad my three jobs could be during the day": Women and work in a rural community. *Family Relations*, 55, 119-131.
- Bainbridge, J., Meyers, M. K., & Waldfogel, J. (2003). Child care policy reform and the employment of single mothers. *Social Science Quarterly*, 84(4), 771-791.
- Barnes, S. L. (2003). Determinants of individual neighborhood ties and social resources in poor urban neighborhoods. *Sociological Spectrum*, 23, 463-497.
- Bartle, E., & Pearlmutter, S. (2003). Participants' perceptions of the child care subsidy system. *Journal of Sociology and Social Welfare*, 30(4), 157-173.
- Bauman, K. J. (2000). "The Effect of Work and Welfare on Living Conditions in Single Parent Households." Working paper no. 46. U.S. Census Bureau, Population Division, Washington, DC.
- Bell, H. (2003). Cycles within cycles: Domestic violence, welfare, and low-wage work. *Violence Against Women*, 9(10), 1245-1262.
- Blalock, L., Tiller, V., & Monroe, P. (2004). "They get you out of courage:" Persistent deep poverty among former welfare-reliant women. *Family Relations*, 53, 127-137.
- Blank, R. M. (2002). Improving the safety net for single mothers who face serious barriers to work. *The Future of Children*, 17(2), 183-197.
- Bronfenbrenner, U. (1989). Ecological systems theory. *Annals of Child Development*, 6, 187-249.

- Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon & R. M. Lerner (Vol. Eds.), *Handbook of child psychology: Vol. 1: Theoretical models of human development* (5th ed., pp. 993-1028). Hoboken, NJ: John Wiley & Sons Inc.
- Brooks, F. (2002). Impact of child care subsidies on family and child well-being. *Early Childhood Research Quarterly*, 17, 498-511.
- Brown, V. L., & Riley, M. A., (2005). Social support, drug use, and employment among low-income women. *The American Journal of Drug and Alcohol Abuse*, 31, 203-223.
- Chaudry, A. (2004). *Putting children first: How low-wage working mothers manage child care*. New York: Russell Sage Foundation.
- Buss, A. H. & Plomin, R. (1975). *A Temperament Theory of Personality*. New York: Wiley.
- Cohen, P. N. (2002). Extended households at work; Living arrangements and inequality in single mothers' employment. *Sociological Forum*, 17, 445-463.
- Coley, R. L, Li-Grining, C, & Chase-Lansdale, L. (2006). *Low-income families' child care experiences*. In H.E. Peters (Ed.), *From welfare to child care*. New York: Russell Sage.
- Danziger, S. K., Kalil, A., & Anderson, N. J. (2000). Human capital, physical health, and mental health of welfare recipients: Co-currence and correlates. *Journal of Social Issues*, 56(4), 635-654.
- Dearing, E., McCartney, K., and Taylor, B. (2001). Change in family income-to-needs matters more for children with less. *Child Development*, 72(6), 1779-1793.
- Derogatis, L. R. (2000). *Brief Symptom Inventory 18, administration, scoring, and procedures manual*. Minneapolis, MN: National Computer Systems.

- Dowsett, C. J., Huston, A. C., Imes, A. E., and Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly*, 23, 69-93.
- Duncan, G., Dunifon, R., Doran, M., Yeung, W. (2001). How different are welfare and working families? And do these differences matter for children's achievement? In G. J. Duncan & P. Chase-Lansdale (Eds.), *For Better and for worse: Welfare reform and the well-being of children and families*. New York: Russell Sage.
- Duncan, G., & Brooks-Gunn J. (2000). Family poverty, welfare reform, and child Development. *Child Development*, 71 (1), 188-196.
- Early, D. M., & Burchinal, M. R. (2001). Early childhood care: Relations with family characteristics and preferred care characteristics. *Early Childhood Research Quarterly*, 16, 475-497.
- Edin, K., & Lein, L. (1997). *Making ends meet: How single mothers survive welfare and low-wage work*. New York: Russell Sage Foundation.
- Ellen, K., Scott, E., London, A., & Myers, N. A. (2002). Living with violence: Women's reliance on abusive men in their transitions from welfare to work. In N. Gerstel, D. Clawson, & R. Zussman (Eds.), *Families at work: Expanding the bounds* (pp. 302-316). Nashville, TN: Vanderbilt University Press.
- Epps, S. R., Park, S. E., Huston, A. C., & Ripke, M. (2003). *Psychometric analyses of the Positive Behavior Scale in the New Hope Project and the Panel Study of Income Dynamics*. Washington, DC: Child Trends.
- Fagan, J. (1994). Factors related to depression among higher income mothers with young children in day care centers. *Early Child Development and Care*, 99, 79-92.

- Ficano, C. K. (2006). Child-care market mechanisms: Does policy affect the quantity of care? *Social Service Review*, 454-484.
- Fuller, B., Holloway, S. D., & Liang, X. (1996). Family selection of child-care centers: The influence of household support, ethnicity, and parental practices. *Child Development*, 67, 3320-3337.
- Fuller, B., Kagan, S., Caspary, G., & Gauthier, C. (2002). Welfare reform and child care options for low-income families. *The Future of Children*, 12(1), 96-119.
- Gable, S. & Cole, K. Parents' child care arrangements and their ecological correlates. *Early Education and Development*, 11(5), 549-572.
- Gibson, C. M., Magnuson, K., Gennetian, L. A., Duncan, G.J., & England, U. (2003). *Does employment protect women from domestic violence? New York: Manpower Demonstration Research Corporation.*
- Gibson-Davis, C. M., Magnuson, K., Gennetian, L. A., & Duncan, G. J. (2005). Employment and the risk of domestic violence among low-income women. *Journal of Marriage and Family*, 67, 1149-1168.
- Ginnarelli, L., & Barismantov, J. *Child care expenses of America's families*. Washington, DC: Urban Institute, 2000.
- Gordon, R. A., Kaestner, R., & Korenman, S. (2008). Child care and work absences: Trade-offs by type of care. *Journal of Marriage and Family*, 70, 239-254.
- Gutman, M. A., McKay, J. Ketterlinus, R. D. & McLellan, A. T. (2003). Potential barriers to work for substance-abusing women on welfare: Finding from the CASAWORKS for families pilot demonstration. *Evaluation Review*, 27, 681-706.
- Han, W. (2004). Nonstandard work schedules and child care decisions: Evidence from the

- NICHD study of early child care. *Early Childhood Research Quarterly*, 19, 231-256.
- Harford, T. C. & Grant, B.F. (1994). Prevalence of population validity of DSM-III alcohol abuse and dependence: The 1989 NLSY79. *Journal of Substance Abuse*, 6(1), 37-44.
- Harknett, K. (2006). The relationship between private safety nets and economic outcomes among single mothers. *Journal of Marriage and Family*, 68, 172-191.
- Henly, J. R. & Lyons, S. (2000). The negotiation of child care and employment demands among low-income parents. *Journal of Social Issues*, 56(4), 683-706.
- Henly, J. R., Danziger, S. K., & Offer, S. (2005). The contribution of social support to the material well-being of low-income families. *Journal of Marriage and Family*, 68, 122-140.
- Herbst, C. M. & Barnow, B. S. (2008). Close to home: A simultaneous equations model of the relationship between child care accessibility and female labor force participation? *Journal of Family Economic Issues*, 29, 128-151.
- Horowitz, S. M. & Kerker, B. D. (2001). Impediments under welfare reform: The importance of physical health and psychosocial characteristics. *Women and Health*, 32(1/2), 101-117.
- Huston, A. C., Chang, Y. E., & Gennetian, L. (2002). Family and individual predictors of child care use by low-income families in different policy contexts. *Early Childhood Research Quarterly*, 17, 441-469.
- Johansen, A. S., Leibowitz, A., & Waite, J. L. (1996). The importance of child-care characteristics to choice of care. *Journal of Marriage and Family*, 58, 759-772.
- Katras, M. J., Zuiker, V., & Bauer, J. (2004). Private safety net: Resources from the perspective of rural low-income families. *Family Relations*, 53, 201-209.

- Kimmel, J. (2006). Child care, female employment, and economic growth. *Journal of the Community Development Society*, 37(2), 71-85.
- Leiter, V., Krauss, M. W., Anderson, B., & Wells, N. (2004). The consequences of caring: Effects of mothering a child with special needs. *Journal of Family Issues*, 25, 379-403.
- Lewis, D. A. & Lee, B. J., & Altenbernd, L. M. Depression and welfare reform: From barriers to inclusion. *Journal of Community Psychology*, 34(4), 415-433.
- Lindhorst, T., Oxford, M., Gillmore, M. R. (2007). Longitudinal effects of domestic violence on employment and welfare outcomes. *Journal of Interpersonal Violence*, 22(7), 812-828.
- Lindsey, D. & Martin, S. (2003). Deepening child poverty: The not so good news about *Children and Youth Services*, 25(1/2), 165-173.
- Livermore, L. M. & Powers, R. S. (2006). Employment of unwed mothers: The role of government social support. *Journal of Family Economic Issues*, 27, 479-494.
- Lohman, B. J, Pittman, L. D., Coley, R. L., & Chase-Lansdale, P. L. (2004). Welfare history sanctions, and developmental outcomes among low-income children and youth. *Social Service Review*, 78, 41-73.
- Meyers, M. K., Heintze, T., & Wolf, D. A. (2002). Child care subsidies and the employment of welfare recipients. *Demography*, 39(1), 165-179.
- National Institute of Child Health and Early Development Early Child Care Research Network (1997). Poverty and patterns of child care. In G.J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor*. New York: Russell Sage.
- Orthner, D. K., Jones-Sanpei, H., and Williamson, S. (2004). The resilience and strengths of

- low-income families. *Family Relations*, 53, 159-167.
- Prelow, H. M., Weaver, S. R., Swenson, R. R., Bowman, M. A. (2005). A preliminary investigation of the validity and reliability of the Brief Symptom Inventory-18 in economically disadvantaged Latina American mothers. *Journal of Community Psychology*, 33(2), 139-155.
- Press, J. & Fagan, J. (2006). Spousal childcare involvement and perceived support for paid work. *Journal of Family and Economic Issues*, 27(2), 354-374.
- Press, J., Fagan, J., & Bernd, E. (2006). Child care, work, and depressive symptoms among low-income mothers. *Journal of Family Issues*, 27(5), 609-632.
- Press, J. E. Fagan, J., Laughlin, L. (2006). Taking pressure off families: Child-care subsidies lessen mothers' work-hour problems. *Journal of Marriage and Family*, 68, 155-171.
- Queralt, M., Witte, D., Griesinger, H. (2000). Changing policies, changing impacts: Employment earning of child-care subsidy recipients in the era of welfare reform. *Social Service Review*, 74, 588-619.
- Quint, J. C., Bos, H., and Polit, D. F. (1997). *New chance: Final report on a comprehensive program for young mothers in poverty and their children*. New York: MDRC.
- Raphael, J. (1997). Welfare reform: Prescription for abuse? A report on new research studies documenting the relationship of domestic violence and welfare. *Law and Policy*, 19, 123-137.
- Riger, S. & Staggs, S. L. (2004). Welfare reform, domestic violence, and employment. What do we know and what do we need to now? *Violence Against Women*, 10(9), 961-990.

- Romero, D., Chavkin, W., Wise, P. H., Smith, L. A., & Wood, P. R. (2002). Welfare to work: Impact of maternal health on employment. *Journal of Public Health*, 92(9), 1462-1468.
- Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family*, 14, 75-88.
- Straus, M. A. (1990). The Conflict Tactics Scale and its critics: An evaluation and new data on validity and reliability. In M.A. Strauss & R. J. Gelles, *Physical Violences in American families: Risk factors and adaptations to violence in families* (pp. 49-73). New Brunswick, NJ: Transaction Publishing.
- Tjaden, P., & Thoennes, N. (1998). *Prevalence, incidences, and consequences of violence against women: Findings from the National Violence Against Women Survey*. Washington, DC: National Institute of Justice and Centers for Disease and Prevention.
- Teitler, J. O., Reichman, N. W., & Nepomnyaschy, L. (2004). Sources of support, child care, and hardship among unwed mothers, 1999-2001. *Social Service Review*, 125-148.
- Tolman, R., & Raphael, J. (2000). A review of research on welfare and domestic violence. *Journal of Social Issues*, 56, 655-682.
- Tolman, R., & Wang, H. C. (2005). Domestic violence and women's employment: Fixed effects models of three waves of women's employment study data. *American Journal of Community Psychology*, 36(1-2), 147-158.
- Turner, C. F., Forsyth, B. H., O'Reilly, J. M., Cooley, P. C., Smith, T. K., Rogers, S. M., & Miller, H. G. (1998). Automated self-interviewing and the survey measurement of sensitive behaviors. In M. P. Couper, R. P. Baker, J. Bethlehem, C. Z. F. Clark, J.

- Martin, W. L. Nicholls, II, & J. M. O'Reilly (Eds.), *Computer assisted survey information collection* (pp. 455-473). New York: Wiley.
- Votruba-Drzal, E., Coley, R. L., & Chase-Lansdale, P. L. (2004). Child care and low-income children's development: Direct and moderated effects. *Child Development*, 75, 296-312.
- Votruba-Drzal, E., Coley, R. L., Maldonado-Carreño, C., Li-Grining, C., & Chase-Lansdale, P. L. (in press). Child care and the behavior problems of economically disadvantaged children in middle childhood. *Child Development*.
- Winston, P., Angel, R., Burton, L., Chase-Lansdale, P., Cherlin, A., Moffitt, R., & Wilson, W. (1999). *Welfare, Children, and Families: A Three-City Study, Overview and Design Report*. Available at <http://web.jhu.edu/threecitystudy/images/overviewanddesign.pdf>.
- Youngblut, J. M., Brady, N.R., Brooten, D. (2000). Factors influencing single mother's employment status. *Health Care for Women International*, 21, 125-136.

Figure 1: Theoretical Model

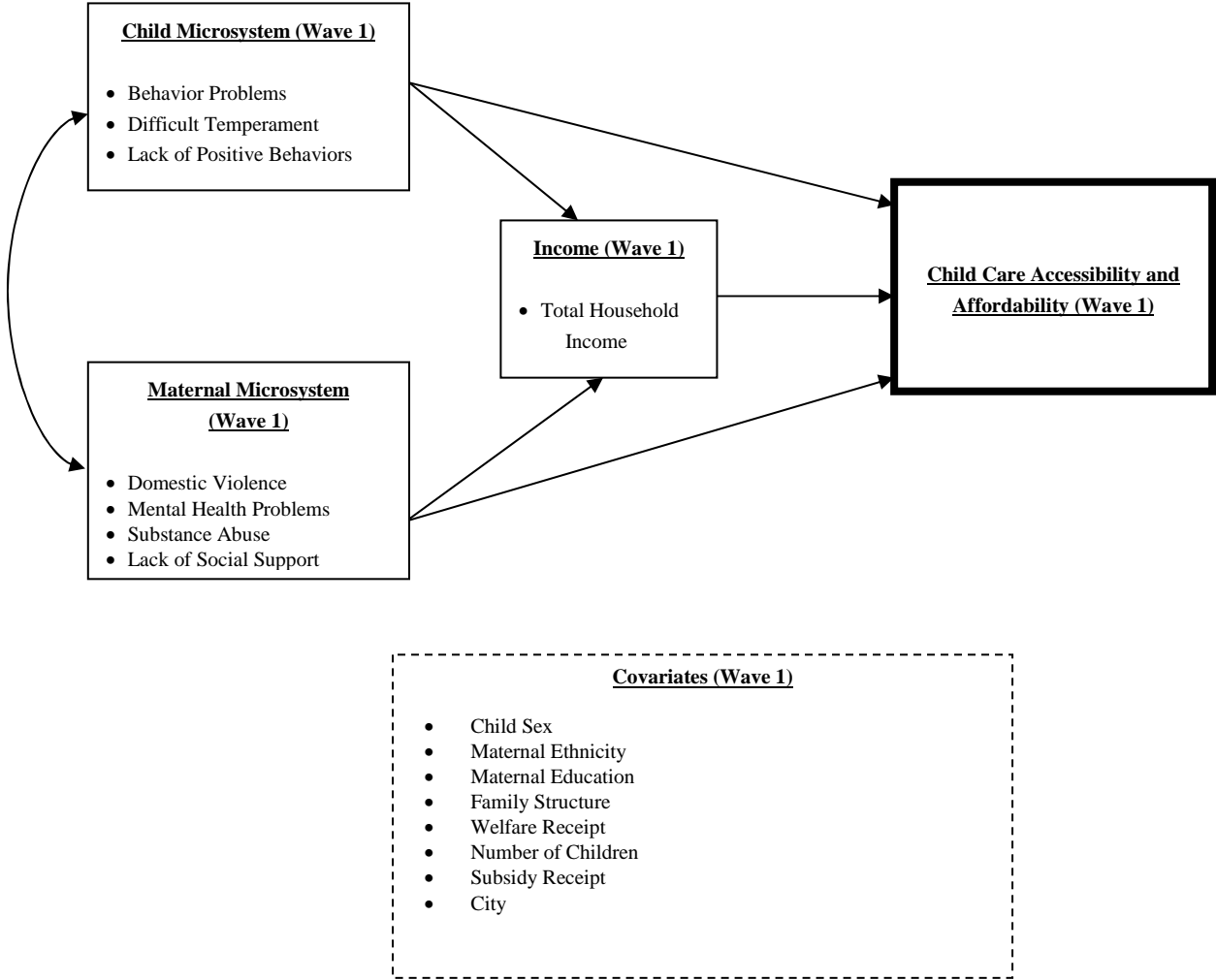
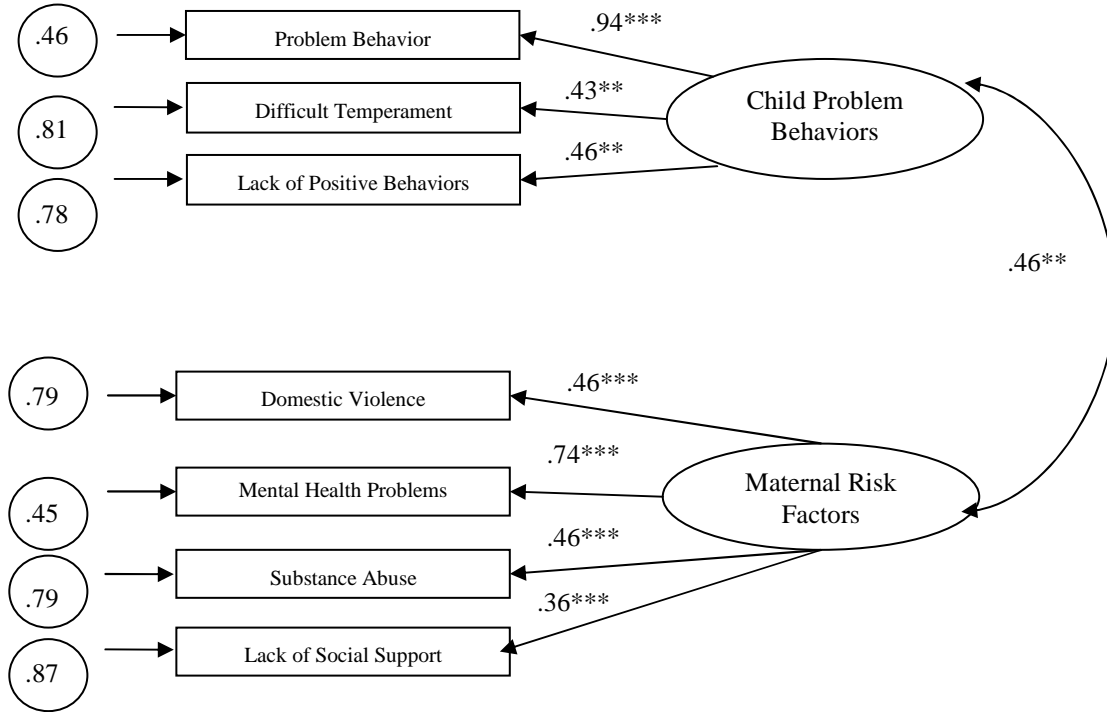
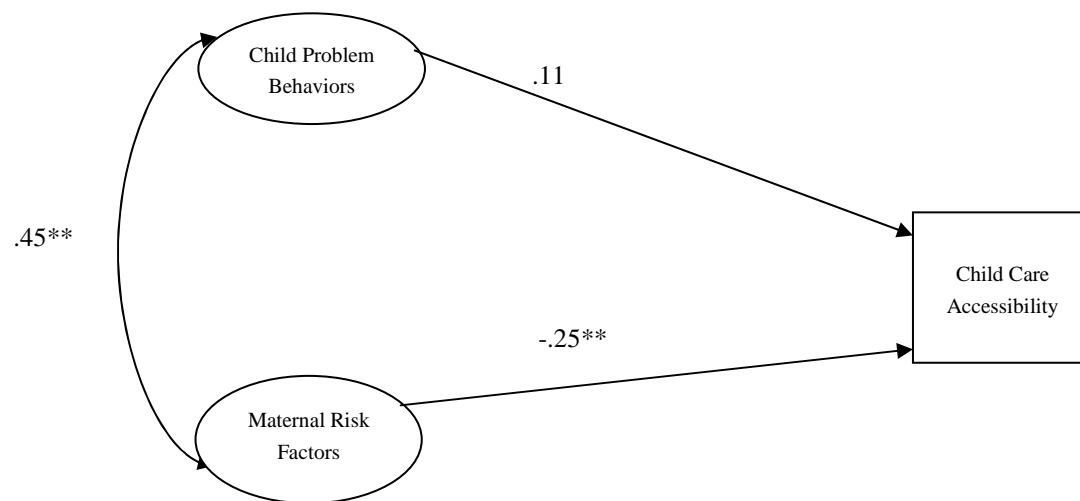


Figure 2: Measurement Model

*Model Fit* $CFI = .97$ $RMSEA = .03$ $\chi^2 = 20.98$

Notes: (1) This is the confirmatory factor analysis model and shows the relationship between the latent constructs and measured variables, (2) *** $p < .001$; ** $p < .01$.

Figure 3: SEM Testing Hypotheses 1 and 2, Accessibility

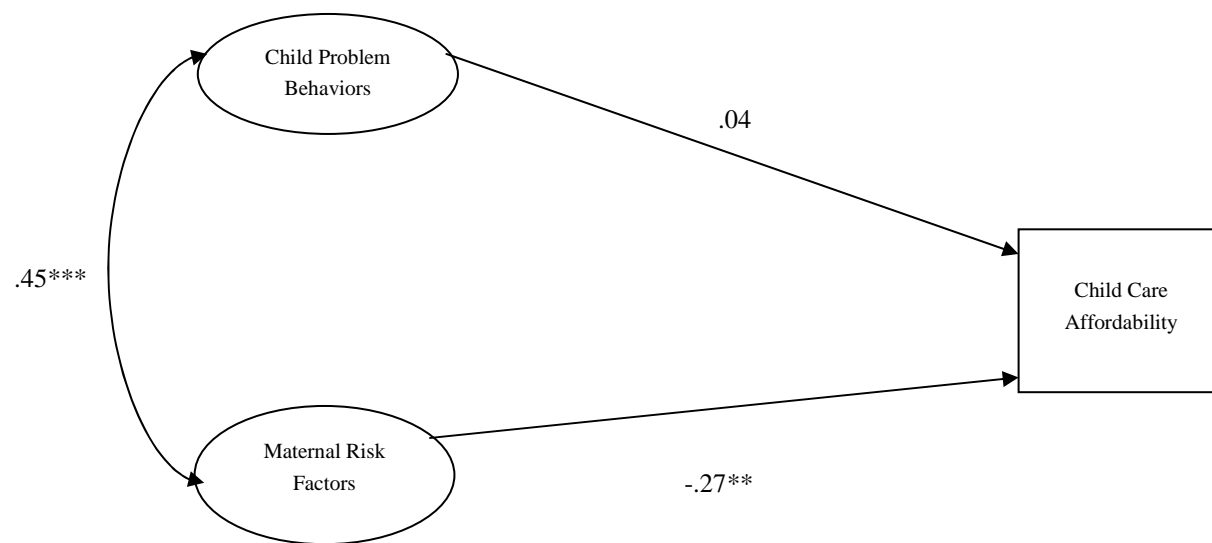


Model Fit:

$CFI = 1.00$
 $RMSEA = .00$
 $\chi^2 = 5.61$

Notes: (1) The figure shows child problem behaviors and maternal risk factors predicting child care accessibility,
(2) ** $p < .01$.

Figure 4: SEM Testing Hypotheses 2 and 3, Affordability

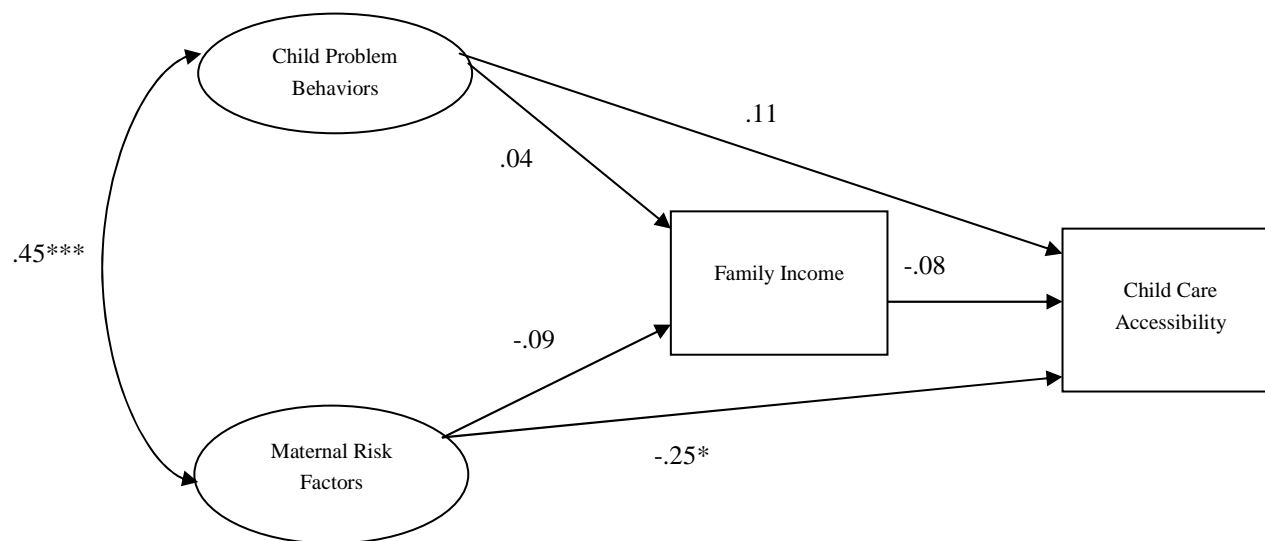


Model Fit:

$CFI = 1.00$
 $RMSEA = .00$
 $\chi^2 = 1.28$

Notes: (1) The figure shows child problem behaviors and maternal risk factors predicting child care affordability, (2) *** $p < .001$; ** $p < .01$.

Figure 5: SEM Testing Hypothesis 3, Accessibility

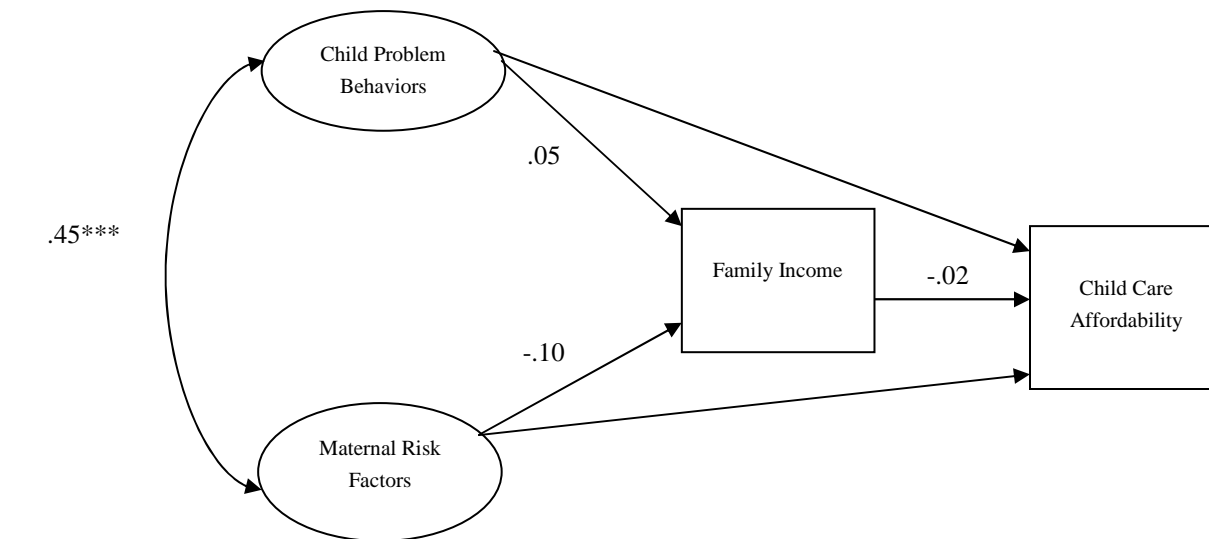


Model Fit:

$CFI = 1.00$
 $RMSEA = .00$
 $\chi^2 = 96.32$

Notes: (1) This figure shows family income mediating the relationship between child problem behaviors and maternal risk factors and child care accessibility, (2) $^{***}p < .001$; $^*p < .05$.

Figure 6: SEM Testing Hypothesis 3, Affordability



Model Fit:

$CFI = 1.00$
 $RMSEA = .00$
 $\chi^2 = 91.51$

Notes: (1) This figure shows family income mediating the relationship between child problem behaviors and maternal risk factors and child care affordability, (2) *** $p < .001$; ** $p < .01$.

TABLES

Table 1: Sample Descriptives for Categorical Variables

Covariates	Percentage	N (320)
<u>Child Sex</u>		
Male	52.8	169
Female	47.2	151
<u>Maternal Education</u>		
More than High School	30.3	97
High School	42.2	135
Less than High School	27.5	88
<u>Maternal Race</u>		
Non-Hispanic White	8.4	27
African-American	50.3	161
Hispanic	41.3	132
<u>Welfare Receipt</u>		
On Welfare	33.1	106
Off Welfare	67.0	214
<u>Family Structure</u>		
Married or Cohabiting	21.6	69
Not Married or Cohabiting	78.4	251
<u>Child Care Subsidy Receipt</u>		
Yes	29.1	93
No	70.9	227
<u>City</u>		
Boston	40.6	130
Chicago	28.1	90
San Antonio	31.3	100

Table 2: Sample Descriptives for Continuous Variables

	Mean	SD	Range
<u>Dependent Variables</u>			
Child Care Accessibility	3.04	0.40	1.70 - 4.00
Child Care Affordability	3.10	0.74	1.00 - 4.00
<u>Child Problem Behaviors</u>			
Child Behavior	52.42	11.05	27.00 - 84.00
Difficult Temperament	3.03	0.98	1.00 - 5.00
Lack of Positive Behaviors	1.87	0.65	1.00 - 4.33
<u>Maternal Risk Factors</u>			
Domestic Violence	0.21	0.29	0.00 - 1.47
Substance Abuse	-0.06	0.42	-0.34 - 1.48
Mental Health Problems	8.16	9.59	0.00 - 64.00
Lack of Social Support	1.68	0.53	1.00 - 3.00
<u>Covariates</u>			
Number of Children	2.44	1.20	1.00 - 8.00
<u>Mediating Variable</u>			
Family Income	1274.86	741.25	0.00 - 4100.00

Table 3: Correlations Among Continuous Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Child Care Accessibility	---												
2. Child Care Affordability	.32**	---											
3. Child Behavior	-.07	-.07	---										
4. Difficult Temperament	-.04	-.15*	.40**	---									
5. Lack of Positive Behaviors	-.10	-.02	.40**	-.26**	---								
6. Domestic Violence	-.07	-.20*	.17**	.12*	.07	---							
7. Substance Abuse	-.04	-.11.	.29**	.09	.15*	.26**	---						
8. Mental Health Problems	-.09	-.13*	.29**	.09	.09	.08	.32*	---					
9. Lack of Social Support	-.25**	-.12*	.19**	.02	.02	.04	.06	.31*	---				
10. Family Income	-.02	-.01	.04	-.05	.08	.00	-.02	.00	-.06	---			
11. Number of Children	.02	.03	.09	-.01	.09	.05	.06	.05	.03	.21** *	---		
12. Female Child	-.03	-.03	.03	-.08	.01	.03	-.06	-.09	.01	.13*	-.02	---	
13. Hispanic	-.14*	.02	-.03	.05	-.04	-.01	-.09	-.02	-.07	-.09	-.02	-.07	---

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 3 Continued

	1	2	3	4	5	6	7	8	9	10	11	12	13
14. Non-Hispanic White	-.00	.02	.09	.01	.10	-.04	.02	.12* *	.04	.08	-.01	-.01	-. .29** *
15. High School Degree	.12	.13	-.05	-.02	-.07	-.05	-. .11	-.08	-.03	-.02	-.01	.03	-.10
16. Less than a High School Degree	-. .12*	-.04	.14* *	.12*	.10	.00	.03	.03	.04	-.05	.06	-.05	.11
17. Married or Cohabiting	-.00	-.08	-.07	.05	.06	-. .20***	-. .11	-.13	-. .12*	-. .26** *	.05	.05	-. .15**
18. Chicago	-.09	.12*	.01	.00	-.05	-.09	-. .08	-.03	.01	.02	-. .15* *	-.02	.14*
19. Boston	.05	.02	-.11	-. .12*	.03	-.06	.02	-.05	.01	.13*	.17* *	-.01	-.11*
20. On Welfare	-. .13*	.09	.09	-.02	.10	.01	.08	.04	.10	-. .22** *	.19* *	.05	.03
21. Receiving Child Care Subsidy	.08	.00	-.02	.09	.03	.10	.06	.05	.08	-.09	-.05	-.07	-.07
22. Maternal Risk Factors	-.06	-. .19**	---	---	---	---	---	---	---	-.03	.07	.05	-.04
23. Child Problem Behaviors	-.10	-. .27** *	---	---	---	---	---	---	---	.01	.09	-.08	-.05

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$

Table 3 Continued

	14	15	16	17	18	19	20	21	22	23
14. Non-Hispanic White	---									
15. High School Degree	.06	---								
16. Less than a High School Degree	-.03	-.53***	---							
17. Married or Cohabiting	-.10	.03	.05	---						
18. Chicago	.18**	.02	-.13	-.17**	---					
19. Boston	-.01	.07	.13*	-.02	-.52**	---				
20. On Welfare	.05	-.12*	.24***	.19**	-.03	.18**	---			
21. Receiving Child Care Subsidy	-.08	.08	-.07	.14*	.05	-.02	.03	---		
22. Maternal Risk Factors	.09	.01	-.13	.22**	-.09	-.05	.09	.00	---	
23. Child Problem Behaviors	.10	.14*	-.05	.11	-.01	-.09	.10	.12	.45***	---

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$

Table 4: Standardized Coefficients for Covariates

<u>Covariates</u>	<u>Accessibility</u>		<u>Affordability</u>	
	β	SE	β	SE
<u>Child Sex</u>				
Male ^A				
Female	-.06	.06	-.06	.06
<u>Ethnicity</u>				
African-American ^A				
Hispanic	-.10	.06	-.00	.06
Non-Hispanic White	.01	.06	.00	.06
<u>Maternal Education</u>				
More than High School ^A				
High School	.01	.07	.10	.07
Less Than High School	-.10	.07	-.02	.07
<u>Family Structure</u>				
Not Married or Cohabiting ^A				
Married or Cohabiting	.02	.06	-.04	.06
<u>City</u>				
San Antonio ^A				
Chicago	-.11	.07	.11	.07
Boston	.01	.07	.04	.07
<u>Welfare</u>				
Not on Welfare ^A				
On Welfare	-.10+	.06	.13*	.06
<u>Child Care Subsidy</u>				
Not Receiving ^A				
Receiving	.10	.06	.02	.06
Number of Children	.04	.06	.04	.06

Notes: (1) N = 320, (2) Standardized coefficients are presented, (3) ^A Omitted group,
 (4) *** $p < .001$; ** $p < .01$; * $p < .05$.

CHAPTER 3: LOW-INCOME MOTHERS' EMPLOYMENT OVER TIME: THE INFLUENCE OF CHILD CARE ACCESSIBILITY AND AFFORDABILITY

A paper to be submitted to the *Journal of Marriage and Family*

Brinn Shjegstad and Brenda J. Lohman

After the enactment of welfare reform in 1996, nearly 4.4 million preschool aged children moved into new child care settings as a result of increased numbers of low-income mothers obtaining employment (Blank & Haskins, 2002; Fuller, Kagan, Caspary, & Gauthier, 2002). Furthermore, total state and federal funding for child care increased from \$2.8 billion in 1995 to \$8.0 billion in 2000 (Fuller et al., 2002). The Personal Responsibility and Work Opportunity Reconciliation Act (PROWRA) of 1996 eliminated the federal entitlement to cash assistance and required low-income women receiving assistance to find employment. Another significant component of welfare reform was the creation of the Child Care and Development Fund (CCDF), a block grant which allocates money for low-income families to access and afford child care. As a result of these significant changes to welfare and child care policy, researchers and policymakers have sought to understand how these changes have impacted low-income families' ability to access and afford child care, as well as low-income mothers' ability to obtain and maintain employment.

Low-income mothers often report difficulty in finding child care that is accessible and affordable (Bartler & Pearlmutter, 2003; Blalock, Tiller, & Monroe, 2004; Katras, Zuiker, & Bauer, 2004). Additionally, low-income mothers report that their employment decisions are influenced by the inability to access and afford child care. Several antecedents may influence low-income mothers' ability to access and afford child care. Among these are child problem behaviors and maternal risk factors such as experiences with domestic violence (Bell, 2003;

Ellen, Scott, London, & Myers, 2002), mental health problems (Fagan, 1994; Press, Fagan, & Bernd, 2006), and lack of social support (Harknett, 2006), which may act as barriers to accessing and affording child care.

Many of these antecedents to low-income mothers' ability to access and afford child have also been found to be linked their ability to obtain and maintain employment. While research has shown that maternal employment impacts child behavior (Han et al., 2001; Joshi & Bogen, 2007; Nomaguchi, 2008; Zaslow & Emig, 1997), this study examined whether child behavior problems impact maternal employment. Maternal risk factors such as experience with domestic violence (Bell & Lohman; Gibson, Magnuson, Gennetian, Duncan, & England, 2003; Lindhorst, Oxford, & Gillmore, 2007; Nam, 2005; Riger & Staggs, 2004; Tolman & Raphael, 2000; Tolman & Wang, 2005), substance abuse (Brown (Riley, Danziger, Kalil, & Henderson, 2000), mental health problems (Danziger et al., 2000; Jayakody & Stauffer, 2000; Romero, Chavkin, Wise, Smith, & Wood, 2006), lack of social support (Brown & Riley, 2005; Livermore & Powers, 2006), and low levels of maternal education (Danziger, et al., 2000; Horowitz & Kerker, 2001) decrease the likelihood that low-income mothers will be employed.

The child problem behaviors and maternal risk factors that are antecedents to low-income mothers' ability to access and afford child care and ability to obtain employment are influenced by family income. Low-income children are particularly at-risk for behavior problems (Duncan & Brooks-Gunn, 2000; Dearing, McCartney, & Taylor, 2001; NICHD Early Child Care Research Network, 2005). Low-income mothers are more likely to experience domestic violence (Tjaden & Thoennes, 2006; Tolman & Raphael, 2000), have

mental health complications (Press et al., 2006) and be at risk for drug and alcohol abuse (Brown & Riley, 2005).

Therefore, the purpose of this study was to examine the influence of child problem behaviors and maternal risk factors on low-income mothers' ability to maintain employment over time. Additionally, this study examined whether family income and child care accessibility and affordability mediate this relationship.

Theoretical Framework

The theoretical framework used for this study is Bronfenbrenner's bioecological theory of human development. Bronfenbrenner's (1989) theory stresses the importance of the various environments in which a person develops and the impact of the interaction of these environments on development. Bronfenbrenner posits that individuals develop within families and families develop within communities. Essential to Bronfenbrenner's theory are the components of proximal processes, person characteristics, context, and time (Bronfenbrenner & Morris, 1998). Proximal processes are the basic interactions between a person and their environment and person characteristics influence whether or not certain proximal processes will occur. This study looked at how person characteristics such as child problem behaviors and maternal risk factors present in low-income mothers' environments influence their ability to access and afford child care.

Proximal processes occur in context. Bronfenbrenner proposes four hierarchical environmental systems as contexts in which individuals develop. First is the *microsystem*, which contains the immediate environments in which a person interacts, such as family and neighborhood. Second is the *mesosystem*, which contains the interaction of two different systems such as the interaction between family and neighborhood. Third is the *exosystem*,

which contains people and places that are not within a person's immediate environment but still impact development such as the media, church, and extended kin. Last is the *macrosystem*, which includes broader societal influences on a person's development such as values, customs, and laws. The fourth component of Bronfenbrenner's theory is time. Time refers to continuity or discontinuity in behavior and actions over time. This study will examine maternal employment over time.

It was beyond the scope of this current study to examine the exosystem and macrostystem. This study examined two microsystems- child and maternal and their influence on low-income mothers' ability to access and afford child care. See Figure 1.

Literature Review

Organization

The effects of child problem behaviors and maternal risk factors on low-income mothers' ability to maintain employment was explored as well as the mediating role of income and child care accessibility and affordability. Therefore, the literature review includes a summary of the previous literature on the following: 1) the influence of child problem behaviors and maternal risk factors on low-income mothers' employment; 2) the influence of child problem behaviors and maternal risk factors on low-income mothers' ability to access and afford child care, 3) the influence of child care accessibility and affordability on low-income mothers' employment patterns over time.

Child Microsystem

Child Behavior

Behavior problems are common among low-income children. Indeed, research has shown that poverty has a negative impact on both the cognitive and social-emotional

development of children especially when children experience poverty in early childhood (Duncan & Brooks-Gunn, 2000; Dearing, McCartney, & Taylor, 2001; NICHD Early Child Care Research Network, 2005). Quality child care experiences, however, can positively impact their social-emotional development (Votruba-Drzal, Coley, & Chase-Lansdale, 2004).

Employment. Most of the literature on maternal employment and child behavior examines how maternal employment impacts children's behavior. These studies show mixed results (Han et al., 2001; Joshi & Bogen, 2007; Nomaguchi, 2008; Zaslow & Emig, 1997) with differential effects based on child race and age. It is hypothesized that higher levels of problem behaviors in children will have a negative influence on low-income mothers' ability to maintain employment. A mother that has a child with higher levels of problem behaviors, difficult temperament or lack of positive behaviors may have complications finding child care that meets the child's need or may have to take time off of work in order to care for the child and therefore is unable to maintain employment.

Child Care Access and Affordability. In studies of children from a wide-range of socioeconomic backgrounds, more hours in child care has been linked to more externalizing behavior in children (NICHD, 2003). In contrast, in a study of low-income children Votruba-Drzal and colleagues (2004) found that child care was positively associated with children's social-emotional development 16-months later regardless of hours in care. However, no research has examined how child behavior may impact access to child care and this study will consider this as a child-level characteristic that may impact low-income mothers' ability to access and afford child care. We hypothesized that mothers who have children with higher levels of behavior problems would have more difficulty accessing and affording child care

because child care providers may not be willing to take children with behavior problems. Furthermore, many low-income mothers do not have access to high quality child care programs and their children may be placed in a child care program where teachers are not educated on how to best deal with children who have behavior problems.

Maternal Microsystem

Maternal risk factors also influence their ability to access and afford child care. These include experiences with domestic violence, substance abuse, mental health problems, and lack of social support. These factors are considered part of the maternal microsystem and were considered maternal risks factor in this study.

Domestic Violence

Rates of domestic violence are particularly high among low-income women (Tolman & Raphael, 2000). According to Tjaden and Thoennes (2006) the rate of domestic violence among women on welfare is three times that of women in the general United States population. Thus, after the enactment of welfare reform policymakers and researchers have sought to understand how domestic violence may influence the transition from welfare to work among low-income women.

Employment. Studies on the impact of domestic violence on women's employment show mixed or inconsistent results (Bell, Lohman, and Vortruba-Drzal, 2006; Gibson, Magnuson, Gennetian, Duncan, & England, 2003; Gibson-Davis, et al., 2005; Lindhorst, Oxford, & Gillmore, 2007; Nam, 2005; Riger & Staggs, 2004; Tolman & Raphael, 2000; Tolman & Wang, 2005). Some studies find that domestic violence decreases the likelihood of low-income mothers' employment (Lindhorst et al., 2007; Nam, 2005). Other studies show no influence of domestic violence on the employment of low-income women (Tolman &

Raphael, 2000). Bell and colleagues (2006) found that women who had transitioned out of employment were more likely to have experienced an increase in domestic violence but they did not find any other significant relationships among domestic violence and low-income women's employment over time.

Child Care Accessibility and Affordability. Low-income mothers often need to secure child care arrangements in order to maintain employment. Research suggests that some women may stay in an abusive relationship in order to utilize their partner as someone who can help with child care upon finding employment (Bell, 2003, Ellen, Scott, London, & Myers, 2002). Ellen and colleagues (2002) found that women stayed in abusive relationships because they needed to rely on their partner for child care. Bell (2003) in a qualitative study of low-income women in abusive relationships reported child care as a barrier to securing employment and that because they worked non-standard work hours they had to rely on their abusive partners to help with child care.

Substance Abuse

Employment. Low-income women are particularly at-risk for substance abuse (Brown & Riley, 2005). Studies show that indeed, those who abuse alcohol and/or drugs are less likely to be employed or work less hours per week (Brown & Riley, 2005; Danziger, Kalil, & Henderson, 2000). Further study of this relationship is needed however longitudinally and within a random sample and therefore this study will examine substance abuse as a maternal risk factor that influences low-income women's employment over time.

Child Care Accessibility and Affordability. How substance abuse may influence low-income mothers' ability to access and afford child care has not been studied and therefore this study was among the first to examine this relationship. We hypothesized that substance

abuse will have a negative effect on low-income mothers' ability to access and afford child care. Mothers with substance abuse problems may use their money to purchase drugs and/or alcohol and therefore may not have enough money to afford child care. Additionally, the emotional and physical effects of substance abuse may impair mothers' ability to make decisions about their children's child care options.

Mental Health

Reports of mental health problems are higher among low-income women than women in the general U.S. population (Press et al., 2006). Mental health problems may be more prevalent among low-income women because the environment created by living in poverty causes stress which leads to mental health problems (Press et al., 2006).

Maternal Employment. Several studies show the influence of mental health problems on low-income women's ability to find and maintain employment (Danziger et al., 2000; Jayakody & Stauffer, 2000; Romero, Chavkin, Wise, Smith, & Wood, 2006). These studies show that women with mental health problems are less likely to be employed. Therefore, this study included mental health as a measure of a maternal risk factor.

Child Care Accessibility and Affordability. The inability to access and afford child care may contribute to the high rates of mental health problems among low-income women (Press et al., 2006). For example, Fagan (1994) found that low-income women whose children participate in Head Start have lower rates of depression and that observed quality child care including more caregiver sensitivity and responsiveness are associated with less feelings of loneliness among mothers. Similarly, Press and colleagues (2006) found that low-income women have higher rates of mental health problems when they are dissatisfied with their current child care arrangements. Therefore, instability in child care arrangements or

inadequate child care may increase the likelihood that low-income women will have mental health problems. What has not been explored is whether mental health problems influence low-income mothers' ability to access and afford child care. This study was among the first to explore this relationship.

Social Support

Employment. Social support includes material and emotional support received from relatives, friends, and neighbors (Harknett, 2006). The importance of social support in the lives of low-income women is well documented. Several studies have examined the relationship between social support networks and low-income families' economic well-being and show the importance of social support networks to the economic well-being of low-income families and their daily lives (Ames, Brosi, & Damiano-Teixeira, 2006; Harknett, 2006; Henly, Danzinger, & Offer, 2005). Additionally, low-income women with higher levels of social support are more likely to be employed (Livermore & Powers, 2006; Brown & Riley, 2005).

Child Care Accessibility and Affordability. Social support is important to low-income mothers as they seek to find child care. A strong social support network may offer low-income women the flexibility and ability to rely on those within the social network to care for their children instead of choosing formal child care arrangements or when formal child care arrangements fall through (Harknett, 2006). Therefore, social support was included as an indicator of a maternal risk factor that influences low-income mothers' ability to access and afford child care.

Mediating Variable: Income

Low-income women have difficulty accessing and affording child care which in turn influences their ability to obtain and maintain employment. Low-income women tend to utilize informal child care arrangements (Fuller et al., 2002; Huston et al., 2002) but these arrangements are usually unstable and therefore may inhibit low-income mothers' ability to obtain and maintain employment (Fuller et al., 2002). Income also impacts the antecedents to low-income mothers' ability to access and afford child care and the antecedents to low-income mothers' ability to maintain employment. Low-income children are more likely to have social-emotional problems (Dearing, McCartney, & Taylor, 2001; NICHD, 2005). Being low-income puts women at risk for domestic violence (Tjaden & Thoennes, 2006; Tolman & Raphael, 2000), mental health complications (Press et al., 2006) and drug and alcohol abuse (Brown & Riley, 2005).

Mediating Variable: Child Care Accessibility and Affordability

Low-income families often have trouble finding child care that is accessible and that is high quality (Blalock et al., 2004; Katras et al., 2004; Fuller et al., 2002; Bartle & Pearlmutter, 2003) because many low-income neighborhoods do not have a large supply of formal child care arrangements (Fuller et al., 2002). Affording child care is another obstacle low-income families face (Katras et al., 2004; Fuller et al., 2002) and studies estimate that working families spend about 23% of their annual income on child care expenses which is a much higher percentage than that for middle-and upper income families (Ginnarelli & Barsimantov, 2000). Furthermore, this percentage may be greater in families headed by a single, working mother (Fuller et al., 2002). Upper-and middle-income families spend a smaller percentage of their income on child care (Ginnarelli & Barsimantov, 2000).

Covariates

Welfare Receipt

Employment. Since the enactment of PROWRA, the number of low-income families on welfare has dramatically decreased (Blank & Haskins, 2002) and an estimated 4 million children have left the welfare rolls (Fuller et al., 2002). Because of limits on the time low-income families can be on welfare, the ability of low-income women to obtain and maintain employment is crucial to their family's financial well-being. Labor participation rates among low-income mothers' increased (Blank & Haskins, 2002). However, there are mixed results as to whether transitions into employment actually improves the economic well-being of low-income families, with some studies showing families with increased income while others show decreased income (Bennet, Su, & Song, 2002; Coley, Lohman, Votruba-Drzal, Pittman, & Chase-Lansdale, 2007; Moffit, 2002).

Child Care Accessibility and Affordability. Because changes in welfare policy included work requirements and time limits, finding adequate and accessible child care is particularly important for low-income mothers receiving TANF (Temporary Aid to Needy Families) because it helps them secure and sustain employment (Cabrera, Hutchens, Peters, 2006). Coley and colleagues (2006) found that recent leavers of welfare (within past two years) have difficulty accessing child care and need to find flexible and accessible child care in order to make the transition from welfare to work.

Number of Children

Employment. Evidence suggests that the number of children a low-income mother has influences her ability to obtain employment (Angrist & Evans, 1998; Brooks, 2002; Kagan, Lewis, Heaton, & Cranshaw, 1999). Specifically, the fewer the number of children a mother

has, the more likely she is to be employed. More children, specifically younger children, requires more time in care giving activities and finding child care arrangements for several young children may prove to be a difficult task.

Child Care Accessibility and Affordability. If a family has multiple children, there is a preference to place all the children in the same child care arrangement (Harris, et al., 2002) and finding child care providers that will accept multiple children from the same family is difficult. Multiple children also makes it more difficult for low-income families to afford child care and studies show that low-income families with multiple children have difficulty accessing child care and report more difficulty with their child care arrangements (Huston et al., 2002).

Child Care Subsidy

In 2008, nearly five billion dollars was allocated for child care subsidies (Administration for Children and Families [ACF], 2008). Research has shown that child care subsidies are critical to helping low-income women gaining employment and affording child care.

Employment. The use of child care subsidies is positively related to low-income mothers' ability to obtain and maintain employment (Bainbridge, Meyers, & Waldfogel, 2003; Danziger, Annat, & Browning, 2004; Meyers, Heintze, & Wolf, 2002; Press, Fagan, & Laughlin, 2006; Queralt, Witt, & Griesinger, 2000).

Child Care Accessibility and Affordability. Mothers who use child care subsidies are less likely to report work-related problems caused by the inability to arrange child care and have more stable child care arrangements (Brooks, 2004; Huston et al., 2002; Press et al. 2006). Other studies indicate subsidy use is linked to use of center-based care which is

considered to be more stable than informal child care arrangements (Huston et al. 2002; Rigley, Ryan, & Brooks-Gunn, 2007).

Child Sex

There are no consistent findings regarding the influence of child sex on parents' child care selections (Hiedman, Joesch, & Rose, 2004; NICHD, 1997). The role of child sex in maternal employment decisions has not been studied and this study will utilized this variable as a covariate in order to further explore this relationship. We hypothesized that there will be no significant relationship between child sex and mother's employment over time.

Education

Employment. Studies consistently show that women with low levels of education have difficulty obtaining and maintaining employment (Danziger et al. 2000; Horowitz & Kerker, 2001). In particular, compared to women with a high school degree or higher than a high school degree women with lower than a high school degree are less likely to be employed.

Child Care Accessibility and Affordability. Informal child care such as relative care, is more typically used by mothers who have low levels of education (Gable & Cole, 2000; Huston, Chang & Gennetian, 2002; Johansen, Lebowitz, & Waite, 1996; Zaslow et al. 1998) However, this may not necessarily reflect their preference for that type of care but may in actuality reflect that mothers with low levels of education have difficulty accessing and affording formal child care arrangements (Coley et al., 2006).

Ethnicity

Employment. According to the Bureau of Labor Statistics (2008), in 2004 59% of Non-Hispanic White women were employed, as were 61.1 % of African-American women, and 56.5% of Hispanic women. Livermore and Powers (2006) note that in the employment

literature, studies have shown inconsistent results on whether ethnicity impacts maternal employment with some studies reporting African-American mothers more likely to be employed while others show Non-Hispanic White mothers more likely to be employed. For example, using data from the Survey of Income and Program Participation (SIPP) from the 1990s, Smith and colleagues (2001) found that indeed ethnicity played a role in mothers' employment with Non-Hispanic White mothers more likely to be employed than African-American and Hispanic mothers. However, once the authors controlled for other factors such as whether or not the mother worked during the pregnancy, the differences in employment by ethnicity disappeared.

Child Care Accessibility and Affordability. A mother's ethnicity influences the type of child care she will choose for her children. Hispanic families are less likely to be in formal child care arrangements such as center-based child care in comparison to Non-Hispanic White and African-American children (Fuller, Holloway, Liang, 1996) while African-American preschoolers are most likely to be in center-based care (Early & Burchinal, 2001). Once again, it is important to consider whether preferences for certain types of care really reflect the inability to access and afford other types of child care.

Family Structure

Employment. According to the Bureau of Labor Statistics (2008), in 2004 61% of married women were employed while 57.6% of unmarried women were employed. Family structure is important aspect in understanding low-income mothers' employment. The presence of a spouse or partner may help low-income women obtain employment because the spouse or partner is able to take care of household duties such as child care which allows women the opportunity to find employment (Bauman, 2000; Cohen, 2004; Han, 2004).

Child Care Accessibility and Affordability. Family structure is important to consider when examining low-income women's access to child care. The addition of another person in the house such as a spouse or partner represents another person who is able to take care of the children while the mother works. Research shows that when such a person is present, that person is likely to care for the children in the household while the mother is employed (NICHD, 1997; Huston et al., 2002) and the family also reports having more stable child care arrangements (Harris, Raley, & Rindfuss, 2002).

Central Aim and Hypotheses

The purpose of this study was to examine the influence of child problem behaviors and maternal risk factors on low-income mothers' ability to maintain employment over time. Additionally, this study examined the relationship between child problem behaviors and maternal risk factors and low-income mothers' ability to maintain employment over time by testing whether income and child care accessibility and affordability mediate this relationship. Structural Equation Modeling (SEM) was utilized and child problem behaviors and maternal risk factors were used as latent constructs. Based on the aforementioned theoretical framework and literature review, the following four hypotheses were proposed:

1. Child problem behaviors, measured as a latent construct by child problem behaviors, difficult temperament, and lack of positive behaviors would be negatively related to low-income mothers' child care employment over time.
2. Maternal risk factors, measured as a latent construct by domestic violence, mental health, and lack of social support would be negatively related to low-income mothers' employment over time.

3. Family income would mediate the relationship between child problem behaviors and maternal risk factors and low-income mothers' employment over time.
4. Child care accessibility and affordability would mediate the relationship between child problem behaviors and maternal risk factors and low-income mothers' employment over time.

This study adds to the existing literature on low-income mothers' ability to access and afford child care and low-income mothers' employment over time by examining the influences that child behavior problems and maternal risk factors have on low-income mothers' employment over time. Furthermore, this study examined whether family income and child care accessibility and affordability mediate the direct relationship between these variables, thus giving a more complex and rich understanding of this relationship. No other study has used such a rich set of contextual variables in an effort to explain the aforementioned relationships over time.

This study also has some limitations. One of the limitations of this study is that the sample is composed of predominately low-income families and therefore the results of the study will not be able to be generalized to middle-and upper-income families. Additionally, this study did not examine nonstandard working hours as a variable that may influence low-income mothers' ability to access and afford child care.

Methods

Sample

Data came from Waves 1 and 2 of the survey component and Embedded Development Study (EDS) of *Welfare, Children, & Families Study: A Three-City Study*.

Forty-thousand households were screened (90% screening rate) in 1999 by professionally trained interviews. Households with incomes below 200% of the poverty line and who had a child between 0 and 4 or 10 and 14 years in 1999 were eligible for the study. Out of those families eligible for the study, a random sample was drawn and of those families selected to participate, interviewers randomly selected one focal child per family, and invited the focal child and his or her primary female caregiver to participate. Data from the survey were collected at three different times, in 1999, 2001, and 2005. The overall response rate was 88% for the second wave of data collection.

Families with children aged 2-4 years at Wave 1 were eligible to participate in a more in-depth developmental study, the Embedded Developmental Study (EDS; N = 737. About 51% of children who participated in the EDS experienced non-maternal child care settings (Votruba-Drzal, Coley, Mandonand-Carreno, Li-Grining, & Chase-Lansdale, In Press). Data from families who had a child age 2-4 years at Wave 1, who participated in the EDS and were in non-maternal child care settings (N = 320) were utilized. Child care was defined as any non-maternal care setting including centers, family child care, relative care (both in-home and out-of-home) and non-relative care (both in-home and out-of-home). See Table 1 for a complete demographic description of the sample and Table 2 for descriptive information on continuous study variables. See Table 3 for a table of correlations among study variables.

Procedure

For the survey component of the *Three-City Study*, professionally trained interviewers completed interviews with children and their caregivers in the families' home. Mothers participated in 2-hour interviews covering topics such as child care, family structure,

education, income, experiences with welfare, and employment experiences. The same set of questions was asked at each wave. For a detailed description of the study see Winston et al., 1999. Mothers completed surveys using a Computer Assisted Personal Interview (CAPI) in which interviewers can enter survey information into a laptop computer. An Automated Computer Assisted Survey Interview (ACASI) was also used when mothers answered questions related to sensitive subjects such as substance abuse, domestic violence, and illegal drug use. Mothers answered questions directly into a laptop computer while listening to questions on headphones. Studies show that using ACASI increased the validity of the responses dealing with sensitive topics (Turner et al., 1998). Caregivers received \$35 for participating in the interview, while a small subsample of caregivers received \$75. The higher incentives only had a small impact on response rates (A. Cherlin, personal communication, October 9, 2009). Eight-two percent of families who received higher incentives were re-interviewed at Wave 3, while 78.4% of families who received lower incentives were re-interviewed at Wave 3. The study was approved by the Institutional Review Board (IRB). See the Appendix for IRB documents.

The EDS was composed of an additional survey for mothers, which included questions on child care accessibility and affordability, child temperament, and work-life balance (85% response rate). Mothers went through an additional 1 hour interview to answer survey questions.

Measures

Dependent Variable

Maternal Employment. At both waves of data collection mothers used a calendar to report on employment status and number of hours worked per week in the past two years or

since the last interview. For this study, a mother was considered employed if she was working 30 or more hours a week in at least 6 of the last 11 months prior to the date of data collection and two of those months had to be in the three most recent months to the date of data collection (Chase-Lansdale et al., 2003). This study used maternal employment information from both Waves 1 and 2. Mother's employment statuses from the two waves were coded into three dummy variables: 1) stably not employed (not employed at both waves), 2) became unemployed (employed at wave 1, unemployed at wave 2, and 3) obtained employment (unemployed at wave 1, employed at wave 2. The referent group was mothers who maintained employment (employed at both waves).

Several different definitions of maternal employment were tested in the models. Other definitions of maternal employment tested included; 1) employed 20 hours per week in two of the three months prior to data collection, 2) employed 20 hours per week in at least 6 of the last 11 months prior to data collection, 3) employed 20 hours per week in at least 6 of the last 11 months and two of those months had to be in the three most recent to data collection, 4) employed 30 hours per week in two of the three months prior to data collection, 5) employed 30 hours per week in at least 6 of the last 11 months prior to data collection, 6) employed 40 hours per week in two of the three months prior to data collection, 7) employed 40 hours per week in at least 6 of the last 11 months, and 8) employed 40 hours per week in at least 6 of the last 11 months and two of those months had to be in the three most recent to data collection. Findings were robust across all definitions of employment and therefore the definition of employment as described above was used in the current study. This same definition has been used in previous studies using *The Three-City* data (Chase-Lansdale et al., 2003).

Independent Variables

Child Microsystem

Child Behavior. The Child Behavior Checklist 2/3 and 4/18 (CBCL; Achenbach, 1991, 1992) was used as measure of children's behavior problems. The CBCL was completed by the child's primary caregiver. The CBCL is composed of 118 items related to children's behavior problems. Questions ask about specific behavioral and emotional problems such as how well child gets along with others. Items are scored on a three-point scale with 1 = *not true*, 2 = *sometimes true*, and 3 = *often true*. The CBCL measures both internalizing and externalizing behavior. Scores were created using the methods recommended by the scales authors and converted to t-scores. The total behavior score which includes both externalizing and internalizing behavior were used for this study ($\alpha=.95$). The content, construct and criterion validity of these measures is documented in the CBCL manuals and all were found to be good (Achenbach 1991, 1992).

Difficult Temperament. The emotionality subscale from the Emotionality, Activity, Sociability and Impulsivity (EASI) Temperament Scale was used to measure children's temperament (Buss & Plomin, 1975; $\alpha=.69$). The subscale consists of the mean of four items related to children's emotionality. Items are scored on five-point scale with 1 = *never like this child*, 2 = *rarely like this child*, 3 = *sometimes like this child*, 4 = *often like this child*, and 5 = *always like this child*. Higher scores reflect higher levels of emotionality problems.

Lack of Positive Behaviors. The Positive Behavior Scale was used to measure children's positive behaviors (Quint, Bos, & Polit, 1997; $\alpha=.72$). The scale consists of the mean of six items scored on a five-point scale with 1 = *not at all like this child*, 2 = *a little like this child*, 3 = *somewhat like this child*, 4 = *a lot like this child*, and 5 = *completely like*

this child. Scores were reverse-coded so higher scores reflect lack of positive behaviors.

Modest construct validity has been found for this measure among both high and low-income children (Epps, Park, Huston, & Ripke, 2003).

Maternal Microsystem

Domestic Violence. Mothers used ACASI at Wave 1 to report their experiences with domestic violence, including both psychological and physical violence using a shortened version of the Conflict Tactics Scale (CTS; Straus, 1979). A mean composite score was created from 13 items in which mothers used a 4-point Likert scale ($1 = \text{never}$ to $4 = \text{often}$; $\alpha_{W1} = .90$) to rate their experiences with domestic violence. Scores were logged and square rooted to adjust for skewness. The CTS has been used widely on populations from diverse backgrounds and has been found to be a reliable and valid measure (Straus, 1990).

Substance Abuse. Mothers used ACASI at Wave 1 to report on their illegal drug and alcohol use. Mothers answered a shortened version of the substance abuse scale used by the National Longitudinal Survey of Youth (NLSY; Borus et al., 1982). A mean composite score was created for each wave from four items in which mothers used a 4-point Likert scale ($1 = \text{never}$ to $4 = \text{often}$; $\alpha_{W1} = .45$) to rate their experiences with drug and alcohol use over the past year. Harford and Grant (1994) found the measure to have adequate population validity.

Mental Health Problems. The Brief Symptoms Inventory 18 (BSI-18; Derogatis, 2000) was used to assess mothers' mental health problems. The BSI-18 is composed of 18 questions that cover symptoms of somatization, anxiety, and depression. Scores were averaged and then converted to t-scores following the scale's author's requirements. Responses to questions were coded 0-4 ($0 = \text{not at all}$, $4 = \text{extremely}$). The BSI-18 has been

found to have construct and content validity among low-income women (Prelow, Weaver, Swenson, & Bowman, 2005).

Lack of Social Support. This study used social support as measured at Wave 1 of data collection. Mothers were asked four questions regarding social support: 1) whether the mother had others for emotional support; 2) whether the mother had others to care for children; 3) whether the mother had others to ask for small favors; and 4) whether the mother had others to help with emergency loans. Responses to the social support network were coded as 1 (*enough people*), 2 (*too few people*), and 3 (*no one*). A composite social support score was computed using the average of the responses to the four questions with higher composite scores indicating greater need for social support ($\alpha = .79$).

Covariates

Welfare Status. Families' welfare experiences were obtained at Wave 1 via maternal reports. Categories were dummy coded (1,0), currently on welfare (1) and not on welfare (0).

Number of Children. Mothers were asked about how many children under the age of 18 currently live in the household. Total number of children under the age of 18 was used to create this variable.

Child Care Subsidy Receipt. Mothers were asked if they received help in the previous week paying for child care. Responses were coded 1 if the mother received help in the previous week paying for child care from the federal/state government and 0 if they did not.

Child sex (1 = male, 0 = female) was used in the current study.

Maternal Education. Maternal education from the Wave 1 was coded into three different categories. Categories were dummy coded (1, 0) using the highest level of education the mother had received by Wave 1: 1) higher than a high school education; 2)

high school education; and 3) no high school education. The referent group used in the analyses was mothers with an education higher than a high school degree.

Maternal Ethnicity. Mothers' ethnicity and was obtained at Wave 1. Mothers' ethnicity was be coded into three dummy categories (1, 0): 1) Hispanic; 2) African American; and 3) Non- Hispanic White; African Americans was used as the referent group.

Family Structure. Family structure from Wave 1 was used. At Wave 1, mothers were asked about their current family structure. Family structure was coded into two categories: a) married or cohabitating (1); and b) not married nor cohabitating (0).

City. City was used as a covariate in the current study. This variable was coded into three dummy categories (1, 0): 1) Boston; 2) Chicago; and 3) San Antonio; San Antonio was used as the referent group.

Mediating Variables

Child Care Accessibility and Affordability. At Wave 1 during the EDS survey component, mothers were asked about their ability to access and afford child care. Two composite measures were constructed; one for accessibility and one for affordability (Coley, et al., 2006). The accessibility composite consists of the mean score of 10 items that ask mothers about their experiences in finding child care, for example if transportation was a problem in looking for child care. A 4-point Likert scale was utilized to answer the questions (*1 = strongly disagree to 4 = strongly agree*). Higher composite scores reflect greater child care accessibility ($\alpha = .59$). The affordability composite consists of the mean score of four items that ask mothers about their ability to afford child care. A 4-point Likert scale was utilized to answer the questions (*1 = strongly disagree to 4 = strongly agree*). A higher

composite score reflects greater ability to afford child care ($\alpha = .60$). See Appendix A for a full description of these scales.

Total Household Income. Mothers were asked about their income during the two-hour interview. Total income is a cumulative number consisting of the previous month's income (before taxes and deduction) plus the following: unemployment insurance, food stamps, Supplemental Security Income (SSI), cash, welfare payments, child support payments, Social Security disability, worker's compensation/other disability, Social Security retirement or survivor payments, other pension or retirement income, and income from relatives/friends. Maternal earnings and a measure of income-to-needs were also tested as an indicator of family income. Findings were robust across indicators of family income and thus total household income was used as the final indicator of family income in this study.

A measure of total household income was utilized because it may give a more accurate picture of income from all sources. For example, if a family is receiving food stamps, money that may have been spent on food can be used for other household needs such as child care. Another example is that some families may receive money from family and friends that can be utilized to buy household needs such as child care. Hence, total household income accounts for all possible sources of income that may be available for families to use to purchase child care.

Results

First, it was hypothesized that child problem behaviors, measured as a latent construct by child behavior, difficult temperament, and lack of positive behaviors would be negatively related to low-income mothers' employment over time. Second, it was hypothesized that maternal risk factors, measured as a latent construct by domestic violence, mental health

problems, and lack of social support would be negatively related to low-income mothers' employment over time. Third, it was hypothesized that family income would mediate the relationship between child problem behaviors and maternal risk factors and low-income mothers' employment over time. Fourth, it was hypothesized that child care accessibility and affordability would further mediate the relationship between the latent constructs and low-income mothers' employment over time.

All SEM models were analyzed using MPLUS. First, prior to testing any of the hypotheses, an analysis of the measurement model was conducted using Confirmatory Factor Analysis. Results showed the measurement model was a good fit of the data ($CFI = .97$, $RMSEA = .03$) and all measured variables loaded significantly on the latent variables and all coefficients were above .30. See Figures 3. Second, to test the first and second hypotheses an SEM model was run with child problem behaviors and maternal risk factors predicting maternal employment over time. This model was conducted three separate times, with each of the three employment dummy variables as outcome variables. Third, to test the third hypothesis an SEM model was conducted with family income as the mediator. This model was conducted three separate times, with each of the three employment dummy variables as outcome variables. Fourth, to test the fourth hypothesis an SEM model was conducted with child care accessibility and affordability as a second mediator. This model was conducted six separate times; child care accessibility utilized as the second mediator with each of the three employment dummy variables as outcome variables and then child care affordability utilized as the second mediator with each of the three employment dummy variables as outcome variables. A multinomial variable was not utilized as the outcome variable in the structural

equation model because the reliability of the fit indices is not well-established (Weakliem, 1999).

Models were evaluated using the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) will be used (Levendosky, Leahy, Bogat, Davidson, & von Eye, 2006). Acceptable values for CFI are greater than 0.9 and for RMSEA are less than 0.05.

First and Second Hypotheses

To test the first and second hypotheses an SEM model was conducted with child problem behaviors and maternal risk factors predicting maternal employment over time. Mothers with higher levels of maternal risk factors were more likely to become unemployed than maintain employment ($\beta = .22, p < .05$). Mothers with children who had higher levels of child problem behaviors were less likely to become unemployed than maintain employment, but only at the trend level ($\beta = -.20, p < .10$). See Table 4.

Third Hypothesis

To test the third hypothesis, an SEM model was conducted to assess whether family income mediated the relationship between child problem behaviors and maternal risk factors and maternal employment. Mothers with higher family income were more likely to become unemployed than maintain employment ($\beta = .42, p < .05$). Mothers with higher family income were less likely to become employed than maintain employment ($\beta = -.18, p < .05$). Mothers with higher family income were less likely to be stably unemployed than maintain employment ($\beta = -.73, p < .001$). However, results did not support Hypothesis Three. Specifically, results showed that family income did not mediate the relationship between child problem behaviors and maternal risk factors and maternal employment. See Table 5.

Fourth Hypothesis

To test the fourth and fifth hypotheses, SEM was conducted to assess whether family income and child care accessibility and affordability mediated the relationship between child problem behaviors and maternal risk factors and maternal employment. Additionally, this SEM model assessed whether family income was negatively related to child care accessibility and affordability. Child care accessibility and affordability were not significantly related to maternal employment over time. Furthermore, results showed family income and child care accessibility and affordability do not mediate the relationship between child problem behaviors and maternal risk factors and low-income mothers' employment. Income was not significantly related to child care accessibility and affordability. See Tables 6 and 7.

Discussion

This study adds to the existing literature on low-income mothers' employment experiences by examining the relationship between child problem behaviors and maternal risk factors and low-income mothers' employment over time. Furthermore, this study examined whether family income and child care accessibility and affordability mediated the relationship between these variables, thus giving a more complex and rich understanding of these relationships.

Consistent with the stated hypotheses, mothers with more maternal risk factors were more likely to become unemployed than to maintain employed. Contrary to the stated hypotheses, mothers with children who had more child problem behaviors were less likely to be stably unemployed than to maintain employment. The findings of the mediation models were not consistent with the stated hypotheses. Neither family income nor child care

accessibility and affordability mediated the relationship between child problem behaviors and maternal risk factors and low-income mothers' employment over time. These findings lend support to Brofenbrenner's theory that in order to understand low-income mothers' employment over time, it is imperative to examine the influence of several microsystems. A comparison of these results with prior research, limitations of the current study, future directions for research, and policy implications are discussed.

Discussion of Results

The findings help to give a better understanding of previous research on low-income mothers' employment. By utilizing a rich set of variables and a longitudinal dataset, this study gives a better understanding of the factors that influence low-income mothers' employment over time. The findings are consistent with current literature that utilizes cross-section data to examine the role that maternal risk factors have in influencing low-income mothers' employment (Brown et al., 2000; Danziger et al., 2000; Jayakody & Stauffer, 2000; Tolman & Raphael, 2000; Gibson et al., 2003; Riger & Staggs, 2004; Brown & Riley, 2005; Nam, 2005; Tolman & Wang, 2005; Livermore & Powers, 2006; Romero et al., 2006; Lindhorst et al., 2007). This study builds on previous studies by showing these risk factors have a negative influence on low-income mothers' employment over time. Mothers with higher levels of maternal risk factors were more likely to become unemployed than to maintain employment.

Exposure to domestic violence, mental health and substance abuse problems, and low-levels of social support greatly influence low-income mothers' capacity to maintain steady employment over time. Previous findings on the impact of domestic violence on

mothers' employment experiences show mixed results (Bell et al, 2006; Gibson et al., 2003; Gibson-Davis, et al., 2005; Lindhorst et al., 2007; Nam, 2005; Riger & Staggs, 2004; Tolman & Raphael, 2000; Tolman & Wang, 2005). Findings from the current study support findings by Lindhorst and colleagues (2007) and Nam (2005) that found experiences with domestic violence decrease the likelihood that a mother will be employed. Similarly, findings from the current study support findings by Bell and colleagues (2006) that showed an increase in domestic violence was related to transitions out of employment.

Previous studies have found a link between substance abuse and low-income mothers' employment (Brown & Riley, 2005; Danziger, Kalil, & Henderson, 2000). However, these studies only examined the relationship in a cross-sectional design. The findings from this current study add to the previous literature by utilizing substance abuse as an indicator of a maternal risk factor that influences low-income mothers' employment longitudinally. Substance abuse problems interfere with low-income mothers' capacity to be employed and thus influence their ability to maintain employment over time.

Studies on the relationship between mental health problems and low-income mothers' employment show that mental health problems influence low-income women's employment experiences (Danziger et al., 2000; Jayakody & Stauffer, 2000; Romero et al., 2006). Utilizing mental health problems as an indicator of maternal risk factors, this study supports the findings from previous literature that mental health problems are an impediment to low-income mothers' ability to maintain employment over time. Mental health problems may influence low-income mothers' ability to carry out functions and tasks necessary for employment and therefore influence their ability to maintain employment over time.

Social support has been shown to have a positive influence on low-income mothers' employment experiences (Livermore & Powers, 2006; Brown & Riley, 2005). This study adds to the findings from these studies by using lack of social support as a maternal risk factor that influences low-income mothers' employment over time. Mothers who have family and friends to count on for child care, and give financial and emotional support may be able to maintain employment over time because these factors influence their ability to be able to leave home and go to work (e.g. do not have to take care of children) and in the case of financial and emotional support, have the encouragement to keep going to work and maintain employment.

Interestingly, mothers with children who had more problem behaviors were less likely to be stably unemployed than be stably employed and were also more likely to become unemployed than be stably employed. Perhaps these mothers are more likely to have access to programs such as Head Start or state-funded child care programs which may improve their children's behavior. Research suggests that high quality child care is particularly important to reducing low-income children's behavior problems (Votruba-Drzal et al., 2004; Votruba-Drzal, Coley, Maldonado-Carreno, Li-Grining, and Chase-Lansdale, In Press). Mothers who are stably employed may be making too much money to qualify for program such as Head Start and thus their children are in lower quality programs that have a negative impact on their children's behavior.

Family income did not mediate the relationship between child problem behaviors and maternal risk factors and low-income mothers' employment over time. The sample used in this study is predominately low-income and therefore there was not much variability in income levels across participants. Therefore, this may have influenced whether income

mediated the relationship between child problem behaviors and maternal risk factors and low-income mothers' employment over time.

Contrary to what low-income mothers report in qualitative research, the ability to access and afford child care did not significantly influence low-income mothers' employment over time. A possible explanation is that the range of child care accessibility and affordability may be influenced by the sample being predominately low-income. Therefore, there is not much variability in child care accessibility and affordability as reported by mothers. Additionally, it could be that child care accessibility and affordability actually acts as a single mediator between child problem behaviors and low-income mothers' employment, not as a double-mediator alongside income.

Limitations and Future Directions

One of the limitations of this study is that the sample is composed of predominately low-income families and therefore the results of the study will not be able to be generalized to middle-and upper-income families. Additionally, this study did not examine nonstandard working hours as a variable that may influence low-income mothers' ability to access and afford child care.

Another limitation is that there may be shared method variance among the reports of child problem behaviors and maternal risk factors as they all utilize maternal report.. For example, a woman with greater mental health problems may also report higher behavior problems for her child.

Future research should include mothers from a variety of socioeconomic backgrounds in order to fully understand the relationship between child care accessibility and affordability

and maternal employment. This would allow researchers to draw comparisons between low, middle, and upper-income mothers. Further research should also include macro-level variables such as the unemployment rate, which also may influence low-income mothers' employment. Including both micro-level variables such as maternal risk factors and macro-level variables would give researchers a more robust understanding low-income mothers' employment over time.

Policy Implications

With maternal employment a key component to welfare policy in the United States, it is imperative that policymakers and researchers gain a full understanding of the factors that influence low-income mothers' employment, particular factors that influence their ability to obtain and maintain employment over time. The findings from the present study suggest that maternal risk factors play a key role in low-income mothers' ability to obtain and maintain employment over time. Programs and policies that reduce domestic violence, substance abuse, and mental health problems and facilitate and increase in social support should also be seen as key to helping low-income mothers' obtain or maintain employment. While reductions in such problems are beneficial to the overall health and well-being of low-income mothers, the impact of improved health and well-being on low-income mothers' ability to obtain and maintain employment should also be considered. In order for the TANF program to meets its stated goals of increasing maternal employment, policymakers need to consider the multiple contexts that influence low-income mothers' employment, including maternal risk factors. Many states encourage TANF recipients to go through job training and other programs to help them find employment. Findings from this study suggest policies should

include reducing maternal risk factors as a strategy to help low-income mothers obtain and maintain employment.

Acknowledgements

We gratefully acknowledge the support of the following organizations. Government agencies: National Institute of Child Health and Human Development (RO1 HD36093 “Welfare Reform and the Well-Being of Children”), Office of the Assistant Secretary of Planning and Evaluation, Administration on Developmental Disabilities, Administration for Children and Families, Social Security Administration, and National Institute of Mental Health. Foundations: The Boston Foundation, The Annie E. Casey Foundation, The Edna McConnell Clark Foundation, The Lloyd A. Fry Foundation, The Hogg Foundation for Mental Health, The Robert Wood Johnson Foundation, The Joyce Foundation, The Henry J. Kaiser Family Foundation, The W.K. Kellogg Foundation, The Kronkosky Charitable Foundation, The John D. and Catherine T. MacArthur Foundation, The Charles Stewart Mott Foundation, The David and Lucile Packard Foundation, Searle Fund for Policy Research, and The Woods Fund of Chicago. A special thank you is extended to our research firm, Research Triangle Institute (RTI) as well as to the children and caregivers who graciously participated in the *Three-City Study* and gave us access to their lives.

References

- Angrist, J. D., & Evans, W. N. (1998). Children and their parents’ labor supply. Evidence from exogenous variation in family size. *American Economic Review*, 88, 450-477.
- Achenbach, T. M. (1992). *Manual for Child Behavior Checklist/2-3 and 1992 Profile*. Burlington: University of Vermont, Department of Psychiatry.
- Ames, B. D., Brosi, W. A., & Damiano-Teixiera, K. M. (2006). “I’m just glad my three jobs

- could be during the day”: Women and work in a rural community. *Family Relations*, 55, 119-131.
- Bainbridge, J., Meyers, M. K., & Waldfogel, J. (2003). Child care policy reform and the employment of single mothers. *Social Science Quarterly*, 84(4), 771-791.
- Barnes, S. L. (2003). Determinants of individual neighborhood ties and social resources in poor urban neighborhoods. *Sociological Spectrum*, 23, 463-497.
- Bartle, E., & Pearlmutter, S. (2003). Participants’ perceptions of the child care subsidy system. *Journal of Sociology and Social Welfare*, 30(4), 157-173.
- Bauman, K. J. (2000). “The Effect of Work and Welfare on Living Conditions in Single Parent Households.” Working paper no. 46. U.S. Census Bureau, Population Division, Washington, DC.
- Bell, H. (2003). Cycles within cycles: Domestic violence, welfare, and low-wage work. *Violence Against Women*, 9(10), 1245-1262.
- Bell, H., Lohman, B. J., & Votruba-Drzal, E. (2006). Through a quantitative and qualitative lens: Looking at the differential effects of domestic violence on women's welfare receipt and work participation. In J. Henrici (Ed.) *Going it Alone: U. S. Women in the Age of Welfare Reform*. Tucson, AZ: University of Arizona Press.
- Bennett, N., Lu, H., & Song, Y. (2002). Welfare reform and changes in the economic well-being of children. Cambridge, MA: National Bureau of Economic Research Working Paper.
- Blalock, L., Tiller, V., & Monroe, P. (2004). “They get you out of courage:” Persistent deep poverty among former welfare-reliant women. *Family Relations*, 53, 127-137.
- Blank, R. M. (2002). Improving the safety net for single mothers who face serious barriers to

- work. *The Future of Children*, 17(2), 183-197.
- Blau, F. D., Ferber, M. A., & Winkler, A. E. (1998). *The economics of women, men, and work* (3rd ed.). Upper Saddle River, NJ: Prentice Hall
- Bronfenbrenner, U. (1989). Ecological systems theory. *Annals of Child Development*, 6, 187-249.
- Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon & R. M. Lerner (Vol. Eds.), *Handbook of child psychology: Vol. 1: Theoretical models of human development* (5th ed., pp. 993-1028). Hoboken, NJ: John Wiley & Sons Inc.
- Brooks, F. (2002). Impact of child care subsidies on family and child well-being. *Early Childhood Research Quarterly*, 17, 498-511.
- Brown, V. L., & Riley, M. A., (2005). Social support, drug use, and employment among low-income women. *The American Journal of Drug and Alcohol Abuse*, 31, 203-223.
- Buss, A. H. & Plomin, R. (1975). *A Temperament Theory of Personality*. New York: Wiley.
- Chase-Lansdale, P. L., Moffitt, R., Lohman, B. J., Cherlin, A., Coley, R. L., Pittman, L. D., Roff, J., & Votruba-Drzal, E. (2003). Mothers' transitions from welfare to work and the well-being of preschoolers and adolescents. *Science*, 299, 1548 – 1552.
- Chaudry, A. (2004). *Putting children first: How low-wage working mothers manage child care*. New York: Russell Sage Foundation.
- Cohen, P. N. (2002). Extended households at work; Living arrangements and inequality in single mothers' employment. *Sociological Forum*, 17, 445-463.
- Coley, R. L, Li-Grining, C, & Chase-Lansdale, L. (2006). *Low-income families' child care*

- experiences*. In H.E. Peters (Ed.), *From welfare to child care*. New York: Russell Sage.
- Coley, R. L., Lohman, B. J., Votruba-Drzal, E., Pittman L. D., & Chase-Lansdale, P. L. (2007). Maternal functioning, time, and money: The world of work and welfare. *Children and Youth Services Review, Special Issue on Child and Family Well-Being following Welfare Reform: The Results from Five Non-Experimental Panel Studies of Low-Income Populations*, 29, 721 – 741.
- Danziger, S. K., Kalil, A., & Anderson, N. J. (2000). Human capital, physical health, and mental health of welfare recipients: Co-currence and correlates. *Journal of Social Issues*, 56(4), 635-654.
- Dearing, E., McCartney, K., and Taylor, B. (2001). Change in family income-to-needs matters more for children with less. *Child Development*, 72(6), 1779-1793.
- Derogatis, L. R. (2000). *Brief Symptom Inventory 18, administration, scoring, and procedures manual*. Minneapolis, MN: National Computer Systems.
- Dowsett, C. J., Huston, A. C, Imes, A. E., and Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly*, 23, 69-93.
- Duncan, G., Dunifon, R., Doran, M, Yeung, W. (2001). How different are welfare and working families? And do these differences matter for children's achievement? In G.J. Duncan & P. Chase-Lansdale (Eds.), *For Better and for worse: Welfare reform and the well-being of children and families*. New York: Russell Sage.
- Duncan, G., & Brooks-Gunn J. (2000). Family poverty, welfare reform, and child Development. *Child Development*, 71 (1), 188-196.

- Edin, K., & Lein, L. (1997). *Making ends meet: How single mothers survive welfare and low-wage work*. New York: Russell Sage Foundation.
- Ellen, K., Scott, E., London, A., & Myers, N. A. (2002). Living with violence: Women's reliance on abusive men in their transitions from welfare to work. In N. Gerstel, D. Clawson, & R. Zussman (Eds.), *Families at work: Expanding the bounds* (pp. 302-316). Nashville, TN: Vanderbilt University Press.
- Epps, S. R., Park, S. E., Huston, A. C., & Ripke, M. (2003). *Psychometric analyses of the Positive Behavior Scale in the New Hope Project and the Panel Study of Income Dynamics*. Washington, DC: Child Trends.
- Fagan, J. (1994). Factors related to depression among higher income mothers with young children in day care centers. *Early Child Development and Care*, 99, 79-92.
- Ficano, C. K. (2006). Child-care market mechanisms: Does policy affect the quantity of care? *Social Service Review*, 454-484.
- Fuller, B., Holloway, S. D., & Liang, X. (1996). Family selection of child-care centers: The influence of household support, ethnicity, and parental practices. *Child Development*, 67, 3320-3337.
- Fujiura, G. T. & Ymaki, K. (2000). Trends in demography of childhood poverty and disability. *Exceptional Children*, 66, 187-199.
- Fuller, B., Kagan, S., Caspary, G., & Gauthier, C. (2002). Welfare reform and child care options for low-income families. *The Future of Children*, 12(1), 96-119.
- Gable, S. & Cole, K. Parents' child care arrangements and their ecological correlates. *Early Education and Development*, 11(5), 549-572.
- Gibson, C. M., Magnuson, K., Gennetian, L. A., Duncan, G. J., & England, U. (2003). *Does*

- employment protect women from domestic violence? New York: Manpower Demonstration Research Corporation.*
- Gibson-Davis, C. M., Magnuson, K., Gennetian, L. A., & Duncan, G. J. (2005). Employment and the risk of domestic violence among low-income women. *Journal of Marriage and Family*, 67, 1149-1168.
- Ginnarelli, L., & Barismantov, J. *Child care expenses of America's families*. Washington, DC: Urban Institute, 2000.
- Gordon, R. A., Kaestner, R., & Korenman, S. (2008). Child care and work absences: Trade-offs by type of care. *Journal of Marriage and Family*, 70, 239-254.
- Gutman, M. A., McKay, J. Ketterlinus, R. D. & McLellan, A.T. (2003). Potential barriers to work for substance-abusing women on welfare: Finding from the CASAWORKS for families pilot demonstration. *Evaluation Review*, 27, 681-706.
- Han, W. (2004). Nonstandard work schedules and child care decisions: Evidence from the NICHD study of early child care. *Early Childhood Research Quarterly*, 19, 231-256.
- Harknett, K. (2006). The relationship between private safety nets and economic outcomes among single mothers. *Journal of Marriage and Family*, 68, 172-191.
- Harford, T. C. & Grant, B.F. (1994). Prevalence of population validity of DSM-III alcohol abuse and dependence: The 1989 NLSY79. *Journal of Substance Abuse*, 6(1), 37-44.
- Henly, J. R. & Lyons, S. (2000). The negotiation of child care and employment demands among low-income parents. *Journal of Social Issues*, 56(4), 683-706.
- Henly, J. R., Danziger, S. K., & Offer, S. (2005). The contribution of social support to the material well-being of low-income families. *Journal of Marriage and Family*, 68, 122-140.

- Herbst, C. M. & Barnow, B. S. (2008). Close to home: A simultaneous equations model of the relationship between child care accessibility and female labor force participation? *Journal of Family Economic Issues*, 29, 128-151.
- Horowitz, S. M. & Kerker, B. D. (2001). Impediments under welfare reform: The importance of physical health and psychosocial characteristics. *Women and Health*, 32(1/2), 101-117.
- Huston, A. C., Chang, Y. E., & Gennetian, L. (2002). Family and individual predictors of child care use by low-income families in different policy contexts. *Early Childhood Research Quarterly*, 17, 441-469.
- Johansen, A. S., Leibowitz, A., & Waite, J. L. (1996). The importance of child-care characteristics to choice of care. *Journal of Marriage and Family*, 58, 759-772.
- Kagan, C., Lewis, S., Heaton, P., & Cranshaw, M. (1999). Enabled or disabled? Working parents of disabled children and the provision of child care. *Journal of Community and Applied Social Psychology*, 9, 369-381.
- Katras, M. J., Zuiker, V., & Bauer, J. (2004). Private safety net: Resources from the perspective of rural low-income families. *Family Relations*, 53, 201-209.
- Kimmel, J. (2006). Child care, female employment, and economic growth. *Journal of the Community Development Society*, 37(2), 71-85.
- Levendosky, A. A., Leahy, K. L., Bogat, A., Davidson, W. S., & von Eye, A. (2006). Domestic violence, maternal parenting, maternal mental health, and infant externalizing behavior. *Journal of Family Psychology*, 20, 544-552.
- Lewis, D. A. & Lee, B. J., & Altenbernd, L. M. Depression and welfare reform: From barriers to inclusion. *Journal of Community Psychology*, 34(4), 415-433.

- Lindhorst, T., Oxford, M., Gillmore, M. R. (2007). Longitudinal effects of domestic violence on employment and welfare outcomes. *Journal of Interpersonal Violence*, 22(7), 812-828.
- Lindsey, D. & Martin, S. (2003). Deepening child poverty: The not so good news about *Children and Youth Services*, 25(1/2), 165-173.
- Livermore, L. M. & Powers, R. S. (2006). Employment of unwed mothers: The role of government social support. *Journal of Family Economic Issues*, 27, 479-494.
- Lohman, B. J, Pittman, L. D., Coley, R. L., & Chase-Lansdale, P. L. (2004). Welfare history sanctions, and developmental outcomes among low-income children and youth. *Social Service Review*, 78, 41-73.
- Meyers, M. K., Heintze, T., & Wolf, D. A. (2002). Child care subsidies and the employment of welfare recipients. *Demography*, 39(1), 165-179.
- Moffitt, R. A. (2002). From welfare to work: What the evidence shows. *Welfare Reform and Beyond Policy Brief*, 13, 1–7.
- NICHD Early Child Care Research Network (1997). Poverty and patterns of child care. In G.J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor*. New York: Russell Sage.
- NICHD Early Child Care Research Network & Duncan, G.J. (2003). Modeling the impacts of child care quality on children's preschool cognitive development. *Child Development*, 74(5), 1454-1475.
- Prelow, H. M., Weaver, S. R., Swenson, R. R., Bowman, M. A. (2005). A preliminary investigation of the validity and reliability of the Brief Symptom Inventory-18 in

- economically disadvantaged Latina American mothers. *Journal of Community Psychology*, 33(2), 139-155.
- Press, J. & Fagan, J. (2006). Spousal childcare involvement and perceived support for paid work. *Journal of Family and Economic Issues*, 27(2), 354-374.
- Press, J., Fagan, J., & Bernd, E. (2006). Child care, work, and depressive symptoms among low-income mothers. *Journal of Family Issues*, 27(5), 609-632.
- Press, J. E. Fagan, J., Laughlin, L. (2006). Taking pressure off families: Child-care subsidies lessen mothers' work-hour problems. *Journal of Marriage and Family*, 68, 155-171.
- Queralt, M., Witt, D., Griesinger, H. (2000). Changing policies, changing impacts: Employment earning of child-care subsidy recipients in the era of welfare reform. *Social Service Review*, 74, 588-619.
- Quint, J. C., Bos, H., and D. F. Polit. (1997). *New chance: Final report on a comprehensive program for young mothers in poverty and their children*. New York: MDRC.
- Raphael, J. (1997). Welfare reform: Prescription for abuse? A report on new research studies documenting the relationship of domestic violence and welfare. *Law and Policy*, 19, 123-137.
- Riger, S. & Staggs, S. L. (2004). Welfare reform, domestic violence, and employment. What Do we know and what do we need to now? *Violence Against Women*, 10(9), 961-990.
- Romero, D., Chavkin, W., Wise, P. H., Smith, L. A., & Wood, P. R. (2002). Welfare to work: Impact of maternal health on employment. *Journal of Public Health*, 92(9), 1462-1468.
- Shearn, J., & Todd, S. (2000). Maternal employment and family responsibilities. *Journal of*

- Applied Research in Intellectual Disabilities*, 13, 109-131.
- Smith, K., Downs, B., & O'Connell, M. (2001). Maternity leave and employment patterns: 1961-1995. *U.S. Census Bureau, Current Population Reports, November*, P70-P79.
- Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family*, 14, 75-88.
- Straus, M. A. (1990). The Conflict Tactics Scale and its critics: An evaluation and new data on validity and reliability. In M.A. Strauss & R. J. Gelles, *Physical Violences in American families: Risk factors and adaptations to violence in families* (pp. 49-73). New Brunswick, NJ: Transaction Publishing.
- Tjaden, P., & Thoennes, N. (1998). *Prevalence, incidences, and consequences of violence against women: Findings from the National Violence Against Women Survey*. Washington, DC: National Institute of Justice and Centers for Disease and Prevention.
- Teitler, J. O., Reichman, N. W., & Nepomnyaschy, L. (2004). Sources of support, child care, and hardship among unwed mothers, 1999-2001. *Social Service Review*, 125-148.
- Tolman, R., & Raphael, J. (2000). A review of research on welfare and domestic violence. *Journal of Social Issues*, 56, 655-682.
- Tolman, R., & Wang, H.C. (2005). Domestic violence and women's employment: Fixed effects models of three waves of women's employment study data. *American Journal of Community Psychology*, 36(1-2), 147-158.
- Turner, C. F., Forsyth, B. H., O'Reilly, J. M., Cooley, P. C., Smith, T. K., Rogers, S. M., &

- Miller, H. G. (1998). Automated self-interviewing and the survey measurement of sensitive behaviors. In M. P. Couper, R. P. Baker, J. Bethlehem, C. Z. F. Clark, J. Martin, W. L. Nicholls, II, & J. M. O'Reilly (Eds.), *Computer assisted survey information collection* (pp. 455-473). New York: Wiley.
- Votruba-Drzal, E., Coley, R. L., & Chase-Lansdale, P. L. (2004). Child care and low-income children's development: Direct and moderated effects. *Child Development*, 75(1), 296-312.
- Votruba-Drzal, E., Coley, R. L., Maldonado-Carreño, C., Li-Grining, C., & Chase-Lansdale, P. L. (in press). Child care and the behavior problems of economically disadvantaged children in middle childhood. *Child Development*.
- Weakliem, D. L. (1999). A critique of the Bayesian Information Criterion for model selection. *Sociological Methods and Research*, 27(3), 359-397.
- Winston, P., Angel, R., Burton, L., Chase-Lansdale, P., Cherlin, A., Moffitt, R., & Wilson, W. (1999). *Welfare, Children, and Families: A Three-City Study, Overview and Design Report*. Available at <http://web.jhu.edu/threecitystudy/images/overviewanddesign.pdf>.
- Zigler, E. F., & Lang, M. E. (1991). *Child care choices: Balancing the needs of children, families, and society*. New York: The Free Press.

Figure 1: Theoretical Model

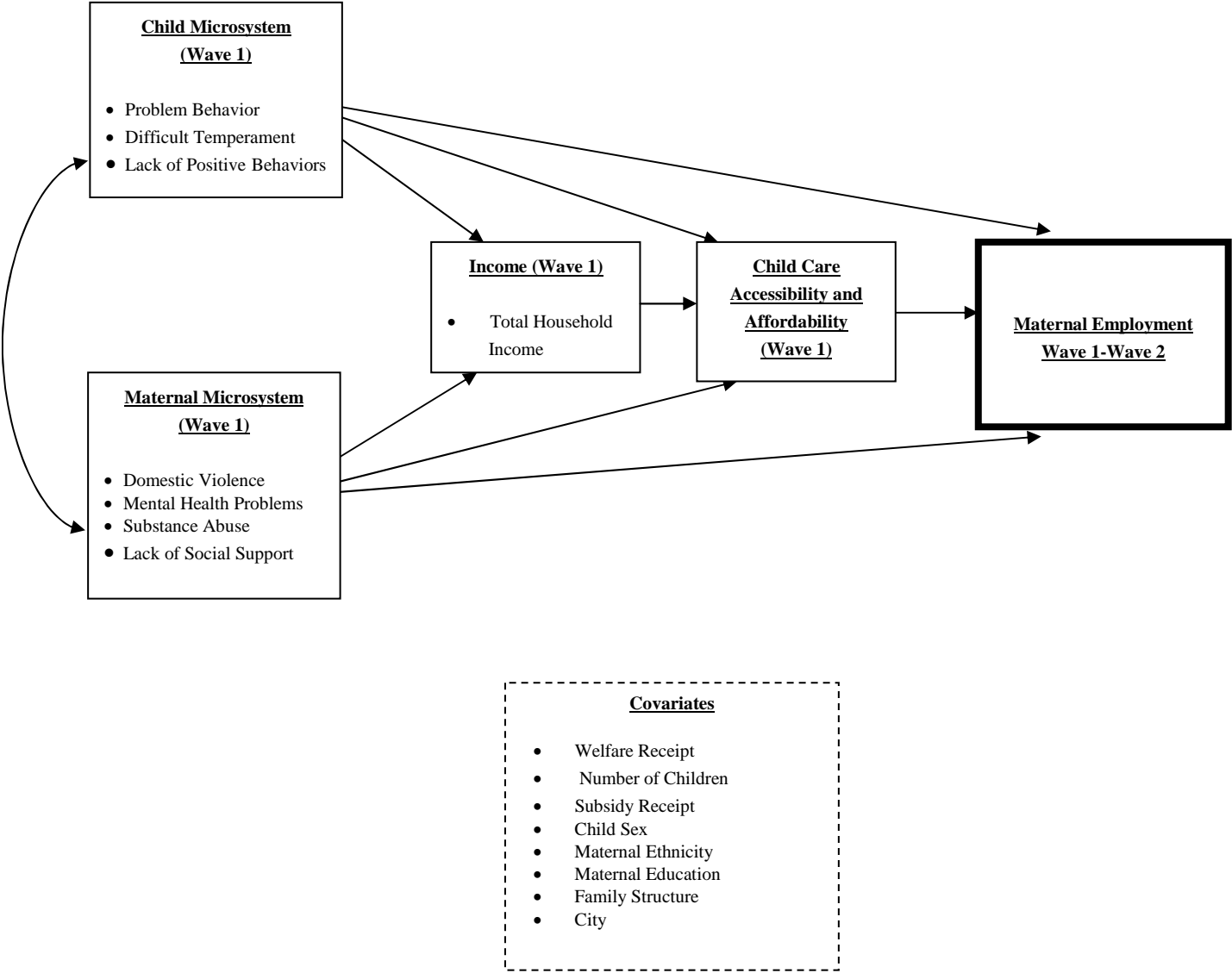
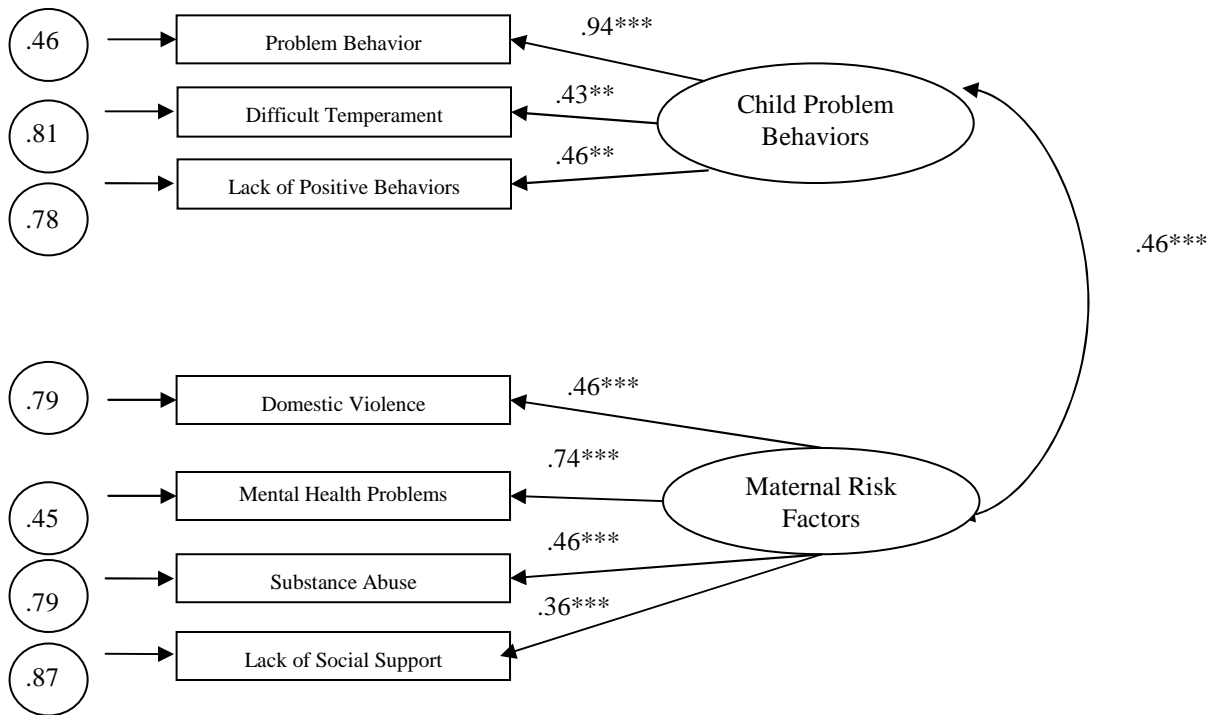
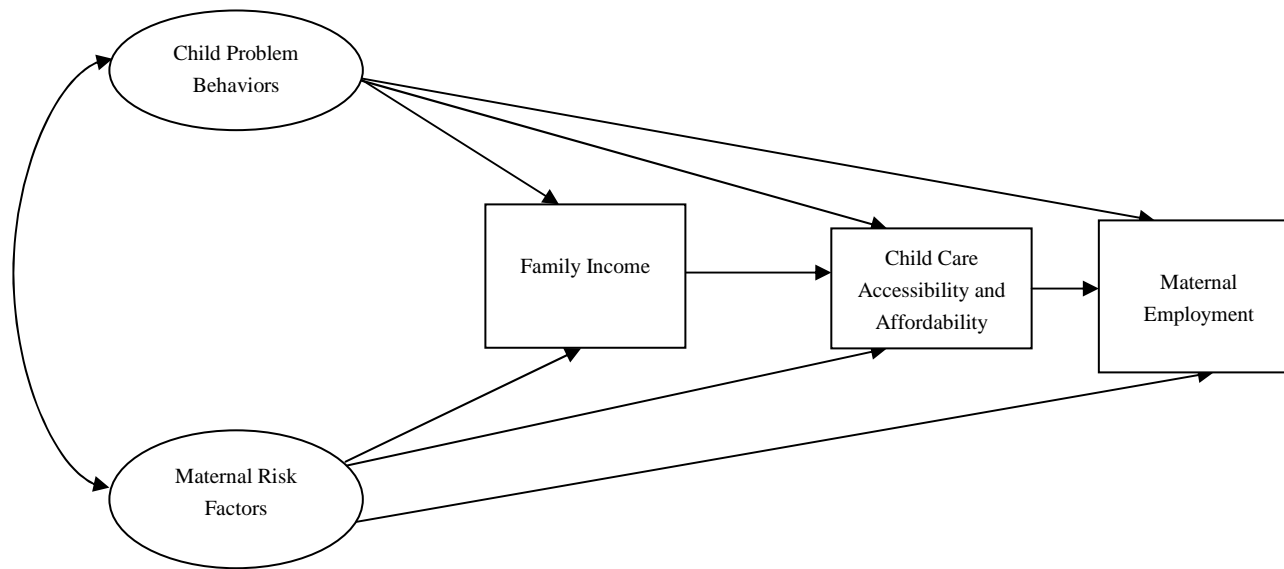


Figure 2: Measurement Model

*Model Fit* $CFI = .97$ $RMSEA = .03$

Notes: (1) This figure is the confirmatory factor analysis model and shows the relationship between the latent constructs and the measured variables, (2) *** $p < .001$; ** $p < .01$.

Figure 5: Structural Equation Model



Tables

Table 1: Sample Descriptives for Categorical Variables

Covariates	Percentage	N (320)
<u>Child Sex</u>		
Male	52.8	169
Female	47.2	151
<u>Maternal Education</u>		
More than High School	30.3	97
High School	42.2	135
Less than High School	27.5	88
<u>Maternal Race</u>		
Non-Hispanic White	8.4	27
African-American	50.3	161
Hispanic	41.3	132
<u>Welfare Receipt</u>		
On Welfare	33.1	106
Off Welfare	67.0	214
<u>Family Structure</u>		
Married or Cohabiting	21.6	69
Not Married or Cohabiting	78.4	251
<u>Child Care Subsidy Receipt</u>		
Yes	29.1	93
No	70.9	227
<u>City</u>		
Boston	40.6	130
Chicago	28.1	90
San Antonio	31.3	100

TABLE 1: Continued

<u>Maternal Employment</u>		
Stably Unemployed	48.1	154
Obtained Employment	19.7	63
Became Unemployed	9.4	30
Maintained Employment	22.8	73

Table 2: Sample Descriptives for Continuous Variables

	Mean	SD	Range
<u>Child Problem Behaviors</u>			
Child Behavior	52.42	11.05	27.00 - 84.00
Difficult Temperament	3.03	0.98	1.00 - 5.00
Lack Positive Behaviors	1.87	0.65	1.00 - 4.33
<u>Maternal Risk Factors</u>			
Domestic Violence	0.21	0.29	0.00 - 1.47
Substance Abuse	-0.06	0.42	-0.34 - 1.48
Mental Health Problems	8.16	9.59	0.00 - 64.00
Lack of Social Support	1.68	0.53	1.00 - 3.00
<u>Covariates</u>			
Number of Children	2.44	1.20	1.00 - 8.00
<u>Mediating Variables</u>			
Family Income	1274.86	741.25	0.00 - 4100.00
Child Care Accessibility	3.04	0.40	1.70 - 4.00
Child Care Affordability	3.10	0.74	1.00 - 4.00

Table 3: Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Child Care Accessibility	---												
2. Child Care Affordability	.32**	---											
3. Child Behavior	-.07	-.07	---										
4. Difficult Temperament	-.04	-.15*	.40**	---									
5. Lack of Positive Behaviors	-.10	-.02	.40**	-.26**	---								
6. Domestic Violence	-.07	-.20*	.17**	.12*	.07	---							
7. Substance Abuse	-.04	-.11.	.29**	.09	.15*	.26**	---						
8. Mental Health Problems	-.09	-.13*	.29**	.09	.09	.08	.32*	---					
9. Lack of Social Support	-.25**	-.12*	.19**	.02	.02	.04	.06	.31*	---				
10. Family Income	-.02	-.01	.04	-.05	.08	.00	-.02	.00	-.06	---			
11. Number of Children	.02	.03	.09	-.01	.09	.05	.06	.05	.03	.21** *	---		
12. Female Child	-.03	-.03	.03	-.08	.01	.03	-.06	-.09	.01	.13*	-.02	---	
13. Hispanic	-.14*	.02	-.03	.05	-.04	-.01	-.09	-.02	-.07	-.09	-.02	-.07	---

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$

Table 3 Continued

	1	2	3	4	5	6	7	8	9	10	11	12	13
14. Non-Hispanic White	-.00	.02	.09	.01	.10	-.04	.02	.12*	.04	.08	-.01	-.01	-.29***
15. High School Degree	.12	.13	-.05	-.02	-.07	-.05	-.11	-.08	-.03	-.02	-.01	.03	-.10
16. Less than a High School Degree	-.12*	-.04	.14*	.12*	.10	.00	.03	.03	.04	-.05	.06	-.05	.11
17. Married or Cohabiting	-.00	-.08	-.07	.05	.06	-.20***	-.11	-.13	-.12*	-.26***	.05	.05	-.15**
18. Chicago	-.09	.12*	.01	.00	-.05	-.09	-.08	-.03	.01	.02	.15* *	-.02	.14*
19. Boston	.05	.02	-.11	-.12*	.03	-.06	.02	-.05	.01	.13*	.17* *	-.01	-.11*
20. On Welfare	-.13*	.09	.09	-.02	.10	.01	.08	.04	.10	-.22***	.19* *	.05	.03
21. Receiving Child Care Subsidy	.08	.00	-.02	.09	.03	.10	.06	.05	.08	-.09	-.05	-.07	-.07
22. Maternal Risk Factors	-.19**	-.27***	---	---	---	---	---	---	---	-.03	.07	.05	-.04
23. Child Problem Behaviors	-.06	-.10	---	---	---	---	---	---	---	.01	.09	-.08	-.05
24. Stably Unemployed	.03	-.06	.02	-.02	.01	.07	.08	-.06	-.02	-.09	.02	-.10	-.03
25. Obtained Employment	.01	-.08	-.02	-.11	-.04	.07	-.03	.08	.02	.21***	-.02	-.04	-.06
26. Became Unemployed	-.08	.12*	.03	.02	-.02	-.09	.02	.04	.03	-.38***	.03	.03	.13*

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$

Table 3 Continued

	14	15	16	17	18	19	20	21	22	23	24	25	26
14. Non-Hispanic White	---												
15. High School Degree	.06	---											
16. Less than a High School Degree	-.03	-.53***	---										
17. Not Married or Cohabiting	-.10	.03	.05	---									
18. Chicago	.18**	.02	-.13	.17* *	---								
19. Boston	-.01	.07	.13*	-.02	-.52**	---							
20. On Welfare	.05	-.12*	.24* **	.19* *	-.03	.18**	---						
21. Receiving Child Care Subsidy	-.08	.08	-.07	.14*	.05	-.02	.03	---					
22. Maternal Risk Factors	.09	.01	-.13	.22* *	-.09	-.05	.09	.00	---				
23. Child Problem Behaviors	.10	.14*	-.05	.11	-.01	-.09	.10	.12	.45** *	---			
24. Stably Unemployed	-.12*	-.01	.05	.03	-.12*	.11	.07	.10	.04	.01	---		
25. Obtain Employment	-.00	.03	-.08	.01	-.05	.13*	-.16**	.03	.12	-.14	-.16**	---	
26. Became Unemployed	.09	-.01	.14*	.06	.16**	-.12*	.25** *	-.09	.01	.05	-.48**	.31** *	---

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$

Table 4: SEM Results, Hypotheses 1 and 2

	UU vs EE	UE vs EE	EU vs EE
<i>Latent Constructs</i>			
Child Problem Behaviors	-.01 (.16)	-.03(.16)	-.20+ (.21)
Maternal Risk Factors	-.05 (.36)	.09(.41)	.22*(.44)
<i>Covariates</i>			
<u>Child Sex</u>			
Male ^A			
Female	.04 (.15)	-.14+ (.17)	-.04(.24)
<u>Ethnicity</u>			
African-American ^A			
Hispanic	.14+ (.17)	-.06+ (.19)	-.06(.27)
Non-Hispanic White	.10 (.29)	-.23(.44)	-.03(.42)
<u>Maternal Education</u>			
More than High School ^A			
High School	.19*(.21)	.02(.25)	-.13(.37)
Less Than High School	.14+ (.32)	.01(.21)	-.08(.31)
<u>Family Structure</u>			
Not Married or Cohabiting ^A			
Married or Cohabiting	.09(.18)	-.03(.23)	.04(.32)
<u>City</u>			
San Antonio ^A			
Chicago	.13(.19)	-.11(.21)	.10(.33)
Boston	-.15+ (.20)	.07(.17)	.30*(.76)
<u>Welfare</u>			
Not on Welfare ^A			
On Welfare	.30***(.17)	.09(.19)	-.39**(.35)
<u>Child Care Subsidy</u>			
Not Receiving ^A			
Receiving	-.13+ (.17)	.11(.18)	.06(.27)
Number of Children	-.04(.06)	-.02(.08)	.10(.10)
χ^2 (62)	280.49	264.18	262.07
CFI	0.63	0.60	0.59
RMSEA	0.07	0.07	0.07

Notes: (1) N = 320, (2) Standardized coefficients are presented, ^A Omitted group; (3) *** $p < .001$; ** $p < .01$; * $p < .05$, + $p < .10$, (4) UU=stably unemployed, UE=obtained employment, EU=became unemployed, EE=maintained employment.

Table 5: SEM Results, Hypothesis Three

	UU vs EE	UE vs EE	EU vs EE
<i>Latent Constructs</i>			
Child Problem Behaviors	.02(.08)	-.02(.17)	-.22+ (.21)
Maternal Risk Factors	-.06(.35)	.08(.41)	.22* (.43)
<i>Covariates</i>			
<u>Child Sex</u>			
Male ^A			
Female	.04(.15)	-.14+ (.17)	-.08(.24)
<u>Ethnicity</u>			
African-American ^A			
Hispanic	.14+ (.17)	-.06(.19)	-.08(.27)
Non-Hispanic White	.10(.29)	-.23+ (.44)	-.03(.42)
<u>Maternal Education</u>			
More than High School ^A			
High School	.19* (.21)	.02(.25)	-.13(.71)
Less Than High School	.14+ (.19)	.01(.21)	-.08(.31)
<u>Family Structure</u>			
Not Married or Cohabiting ^A			
Married or Cohabiting	.09(.18)	-.03(.23)	.04(.32)
<u>City</u>			
San Antonio ^A			
Chicago	.13(.15)	-.11(.21)	.10(.33)
Boston	-.15+ (.20)	.07(.22)	.76* (.31)
<u>Welfare</u>			
Not on Welfare ^A			
On Welfare	.30*** (.17)	.09(.19)	-.39** (.35)
<u>Child Care Subsidy</u>			
Not Receiving ^A			
Receiving	-.12+ (.17)	.11(.18)	.06(.27)
Number of Children	-.04(.06)	-.02(.08)	.10(.10)
<u>Mediator</u>			
Household Income	-.41*** (.09)	-.11(.13)	.24** (.13)
χ^2 (62)	345.00	306.46	307.61
CFI	0.56	0.49	0.59
RMSEA	0.08	0.08	0.07

Notes: (1) N = 320, (2) Standardized coefficients are presented, ^A Omitted group; (3) *** $p < .001$; ** $p < .01$; * $p < .05$, + $p < .10$, (4) UU=stably unemployed, UE=obtained employment, EU=became unemployed, EE=maintained employment.

TABLE 6: SEM Results, Hypothesis 4, Accessibility

	UU vs EE	UE vs EE	EU vs EE
<i>Latent Constructs</i>			
Child Problem Behaviors	.02(.16)	-.02(.17)	-.22+ (.21)
Maternal Risk Factors	-.06(.36)	.09(.43)	.22* (.45)
<i>Covariates</i>			
<u>Child Sex</u>			
Male ^A			
Female	.04(.15)	-.14+ (.17)	-.04(.24)
<u>Ethnicity</u>			
African-American ^A			
Hispanic	.14+ (.17)	-.06(.19)	-.06(.27)
Non-Hispanic White	.10(.29)	-.23+ (.44)	-.03(.42)
<u>Maternal Education</u>			
More than High School ^A			
High School	.19* (.21)	.02(.25)	-.13(.37)
Less Than High School	.14+ (.19)	.01(.21)	-.08(.31)
<u>Family Structure</u>			
Not Married or Cohabiting ^A			
Married or Cohabiting	.09(.18)	-.03(.23)	.04(.32)
<u>City</u>			
San Antonio ^A			
Chicago	.13(.19)	-.11(.21)	.10(.33)
Boston	-.15+ (.20)	.07(.22)	.30* (.31)
<u>Welfare</u>			
Not on Welfare ^A			
On Welfare	.30*** (.17)	.09(.19)	-.39** (.35)
<u>Child Care Subsidy</u>			
Not Receiving ^A			
Receiving	-.12+ (.17)	.11(.18)	.06(.27)
Number of Children	-.04(.06)	-.02(.08)	.10(.10)
<u>Mediators</u>			
Household Income	-.42*** (.09)	-.11(.13)	.24** (.13)
Accessibility	-.04(.18)	.03 (.18)	-.00(.19)
χ^2 (62)	361.03	323.00	324.67
CFI	0.55	0.49	0.48
RMSEA	0.08	0.08	0.08

Notes: (1) N = 320, (2) Standardized coefficients are presented, ^A Omitted group; (3) *** $p < .001$; ** $p < .01$; * $p < .05$, + $p < .10$, (4) UU=stably unemployed, UE=obtained employment, EU=became unemployed, EE=maintained employment.

TABLE 7: SEM Results, Hypothesis 4, Affordability

	UU vs EE	UE vs EE	EU vs EE
<i>Latent Constructs</i>			
Child Problem Behaviors	.03(.16)	-.02(.17)	-.22+ (.21)
Maternal Risk Factors	-.04(.36)	.07(.19)	.20* (.44)
<i>Covariates</i>			
<u>Child Sex</u>			
Male ^A			
Female	.04(.15)	-.14+ (.17)	-.04 (.24)
<u>Ethnicity</u>			
African-American ^A			
Hispanic	.14+ (.17)	-.06 (.19)	-.06 (.27)
Non-Hispanic White	.10 (.29)	-.23+ (.44)	-.03 (.42)
<u>Maternal Education</u>			
More than High School ^A			
High School	.19* (.21)	.02 (.25)	-.13 (.37)
Less Than High School	.14+ (.19)	.01 (.21)	-.08 (.31)
<u>Family Structure</u>			
Not Married or Cohabiting ^A			
Married or Cohabiting	.09 (.18)	-.03 (.23)	.04 (.32)
<u>City</u>			
San Antonio ^A			
Chicago	.13 (.19)	-.11 (.21)	.10 (.33)
Boston	-.15+ (.20)	.07 (.22)	.30* (.31)
<u>Welfare</u>			
Not on Welfare ^A			
On Welfare	.30*** (.17)	.09 (.19)	-.39** (.35)
<u>Child Care Subsidy</u>			
Not Receiving ^A			
Receiving	-.12+ (.17)	.11 (.18)	.06 (.27)
Number of Children	-.04 (.06)	-.02 (.08)	.10 (.10)
<u>Mediators</u>			
Household Income	-.42*** (.09)	-.11 (.13)	.24** (.13)
Affordability	.10 (.10)	-.08 (.12)	-.09 (.11)
χ^2 (62)	363.97	325.55	327.22
CFI	0.57	0.50	0.51
RMSEA	0.08	0.08	0.08

Notes: (1) N = 320, (2) Standardized coefficients are presented, ^A Omitted group; (3) *** $p < .001$; ** $p < .01$; * $p < .05$, + $p < .10$, (4) UU=stably unemployed, UE=obtained employment, EU=became unemployed, EE=maintained employment.

CHAPTER 4: OVERALL SUMMARY

Because of an increased focus on low-income mothers' employment, it is imperative to understand the factors that influence low-income mothers' ability to obtain and maintain employment over time. Low-income mothers report that they lack access to affordable and quality child care and that the inability to access and afford child care influences their employment (Bartle & Pearlmutter, 2003; Blalock, Tiller, Monroe, 2004; Chaudry, 2004; Edin & Lein, 1997; Fuller et al., 2002; Katras, Zuiker, & Bauer, 2004). Thus, it is important to understand the factors that influence low-income mothers' ability to access and afford child care and whether this inability impact low-income mothers' employment over time.

Review of Results

The first article examined how child problem behaviors and maternal risk factors influence low-income mothers' ability to access and afford child care and whether family income mediated this relationship. It was hypothesized that child problem behaviors and maternal risk problems would be negatively related to low-income mothers' ability to access and afford child care. The hypotheses were partially supported. A higher level of maternal risk factors was significantly related to a lower ability to access and afford child care but child behavior problems were not significantly related to low-income mothers' reports of child care accessibility and affordability. Furthermore, family income did not mediate the relationship between child behavior problems and maternal risk factors and child care accessibility and affordability.

The second article examined the antecedents that influence low-income mothers' employment over time and whether family income and child care accessibility and affordability mediated that relationship. The hypotheses were partially supported. Mothers

with a higher level of maternal risk factors were more likely to become unemployed than to maintain employment. However, mothers with children who had more child problem behaviors were less likely to be stably unemployed than to maintain employment. Income and child care accessibility and affordability did not significantly mediate the relationship between the maternal risk factors and child problem behaviors.

Policy Implications

Overall, the findings of the study show the need to examine the policy issues of child care accessibility and affordability and maternal employment through multiple-contexts. In particular, policies that reduce domestic violence, substance abuse, and mental health problems and that facilitate positive social support will also have a positive benefit on low-income mothers' ability to access and afford child care and their ability to obtain and maintain employment over time. Policies targeting child care accessibility and affordability generally focus on increasing child care subsidies and the supply of child care facilities in low-income neighborhoods. However, policymakers and researchers should consider maternal level risk factors that also influence their ability to access and afford child care. Thus, it is important to consider both macro-and micro-level variables. With an increased focus on low-income mothers' employment and work requirements for TANF recipients, the influence that maternal risk factors have on maternal employment should be considered as a part of programs and policies intended to help low-income mothers obtain and maintain employment over time.

Future Research

Low-income mothers are more likely to work non-standard working hours and thus it is important variable that may influence low-income mothers' ability to access and afford

child care. Future research should include this factor. Additionally, future research should include macro-level variables such as number of child care slots in a given area or the employment rate in analyzing the relationship between child care accessibility and affordability and low-income mothers' employment over time. Utilizing both individual, micro-level variables and these more macro-level factors will give policymakers and researchers a more rich understanding of the factors that influence low-income mothers' ability to access and afford child care and their ability to obtain and maintain employment over time.

Future research should also examine child age and ethnicity differences in low-income mothers' ability to access and afford child care. Preschool aged children may be more likely to qualify for publicly funded pre-kindergarten programs and mothers may report greater access to child care if their children participate in these programs than infants and toddlers. (Dowsett, Huston, Imes, & Gennetian, 2008). Furthermore, type of child care selection varies by family ethnicity which may influence the ability to access and afford child care (Fuller, Holloway, & Liang, 1996). For example, Hispanic families are more likely to utilize relative care which may not be as difficult to access and afford as center-based care. Last, future research should examine urban/rural differences in low-income mothers' ability to access and afford child care. This current study utilized an urban sample of low-income families and future research should assess whether child care accessibility and affordability is different for rural families. In rural areas, the availability of child care may be much less than that in urban areas thus affecting low-income mothers' ability to access child care.

References

- Bartle, E., & Pearlmutter, S. (2003). Participants' perceptions of the child care subsidy system. *Journal of Sociology and Social Welfare*, 30(4), 157-173.
- Blalock, L., Tiller, V., & Monroe, P. (2004). "They get you out of courage:" Persistent deep poverty among former welfare-reliant women. *Family Relations*, 53, 127-137.
- Chaudry, A. (2004). *Putting children first: How low-wage working mothers manage child care*. New York: Russell Sage Foundation.
- Dowsett, C. J., Huston, A. C., Imes, A. E., and Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly*, 23, 69-93.
- Fuller, B., Holloway, S. D., & Liang, X. (1996). Family selection of child-care centers: The influence of household support, ethnicity, and parental practices. *Child Development*, 67, 3320-3337.
- Katras, M. J., Zuiker, V., & Bauer, J. (2004). Private safety net: Resources from the perspective of rural low-income families. *Family Relations*, 53, 201-209.

Appendix

This appendix includes Institutional Review Board (IRB) documents for *The Three-City* study as well as an email from Dr. Kerry Agnitsch in the Office of Responsible Research stating separate IRB approval is not needed for this dissertation. Also included are the child care accessibility and affordability scales. See the following pages for these documents.

From Brinn Shjegstad <brinn.shjegstad@gmail.com>
tokagnitsc@iastate.edu

date Tue, Sep 22, 2009 at 12:48 PM
subject IRB
mailed-bygmail.com

Hello! Thanks for taking my phone call. Here is run down on the data I will be using for my dissertation:

- 1) data comes from Welfare, Children, and Families: A Three-City Study. The data has already been collected and publicly released.
- 2) I work with this data for my assistantship, have taken IRB training, and am listed on the IRB for this study
- 3) I am not collecting any new data or going back to interview the participants
- 4) I am not doing anything with the data that is contrary to the study's purpose as stated on the current IRB
- 5) I do not have access to information that allows the identifiers (numeric) in the dataset to be linked back to the study's participants

Thanks!

Brinn

Reply |Agnitsch, Kerry A [ORA] to me

From Agnitsch, Kerry A [ORA] <kagnitsc@iastate.edu>
To Brinn Shjegstad <brinn.shjegstad@gmail.com>

Date Tue, Sep 22, 2009 at 1:45 PM
Subject RE: IRB
mailed-byiastate.edu

Hello Brinn,

Based on the information you've shared below, you will not need to obtain IRB approval. Since you are using existing data that is publicly available and you are not able to link the data back to the individuals who provided it, your study does not include human subjects as defined by federal regulations. As such, IRB approval is not required.

Best of luck with your dissertation!
Kerry Agnitsch, Ph.D.
Co-Chair, Institutional Review Board
Office for Responsible Research
Iowa State University
1138 D Pearson
Ames, IA 50011
515.294.4271

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Assurances
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

DATE: 13 January 2009

TO: Brenda Lohman
2625 N. Loop Drive, Suite 500, Room 592

FROM: Jan Canny, IRB Administrator
Office of Research Assurances

IRB ID: 04-414

Approval Date: 13 January 2009 **Date for Continuing Review:** 1 February 2010

The Co-Chair of Institutional Review Board of Iowa State University has conducted the annual continuing review of the protocol entitled: "Three-City Teacher Study, TCTS." Your study has been approved for a period of one year. The continuing review date for this study is no later than **1 February 2010**.

Based on the information you provided in Section II of the documents submitted for continuing review, we have coded this study in our database as being permanently closed to the enrollment of new subjects, where all subjects have completed all research related activities and the study remains open only for data analysis. To open enrollment or initiate research-related interaction with subjects you must submit a modification and receive IRB approval prior to contacting subjects.

Even though enrollment of subjects has ended, federal regulations require continuing review of ongoing projects. Please submit the form with sufficient time (i.e. **three to four weeks**) for the IRB to review and approve continuation of the study, prior to the continuing review date.

Failure to complete and submit the continuing review form will result in expiration of IRB approval on the continuing review date and the file will be administratively closed. As a courtesy to you, we will send a reminder of the approaching review prior to this date.

Any **changes in the protocol or consent form** should not be implemented without prior IRB review and approval, using the "Continuing Review and/or Modification" form. These documents are located on the Office of Research Assurances website or available by calling (515) 294-4566, www.compliance.iastate.edu.

You must promptly report any of the following to the IRB: (1) **all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems involving risks** to subjects or others.

Upon completion of the project, please submit a Project Closure Form to the Office of Research Assurances, 1138 Pearson Hall, to officially close the project.

For IRB Use Only	Modification Approval Date _____	IRB DEC 12 2008
	Continuing Review Approval Date <u>January 13, 2009</u>	
	Approval Expiration Date: <u>February 1, 2010</u>	

ISU HUMAN SUBJECTS CONTINUING REVIEW AND/OR MODIFICATION FORM

TYPE OF SUBMISSION: ☒ Continuing Review ☐ Modification ☐ Continuing Review and Modification

Principal Investigator: Brenda Lohman		Phone: 294-7413
Degree: M.S., Ph.D.	Correspondence Address: 2625 North Loop Drive, Suite 500, Room 592	
Department: HDFS	E-mail Address: blohman@iastate.edu	
Project Title: Three-City Teacher Study, TCTS		
IRB ID: 04-414	Date of Last Continuing Review: January 18, 2008	
IF STUDENT PROJECT		
Name of Major Professor:	Phone:	
Department:	Campus Address:	
		E-mail Address:

FUNDING INFORMATION:

<input checked="" type="checkbox"/> External Grant/Contract	<input type="checkbox"/> Internal Support (no specific funding source) or Internal Grant (indicate name below)
Name of Funding Source: Funded by the Annie E. Casey Foundation, subcontracted from Northwestern University	OSPA Record ID on Gold Sheet: 04-1876 OR 76399
<input type="checkbox"/> Part of Training, Center, Program Project Grant – Director:	Overall IRB ID No: 04-414

CONFLICT OF INTEREST

The proposed project or relationship with the sponsor require the disclosure of significant financial interests that present an actual or potential conflict of interest for investigators involved with this project. By signing this form, all investigators certify that they have read and understand ISU's Conflict of Interest policy as addressed by the ISU Faculty Handbook and made all disclosures required by it. (<http://www.provost.iastate.edu/faculty>.)

Do you or any member of your research team have a conflict of interest? ☐ Yes ☒ No
If yes, has the appropriate disclosure form been completed? ☐ Yes ☐ No

ASSURANCE

I certify that the information provided in this application is complete and accurate and consistent with proposal(s) submitted to external funding agencies. I agree to provide proper surveillance of this project to insure that the rights and welfare of the human subjects are protected. I will report any adverse reactions to the IRB for review. I agree that modifications to the originally approved project will not take place without prior review and approval by the Institutional Review Board, and that all activities will be performed in accordance with state and federal regulations and the Iowa State University Federal Wide Assurance.

Brenda Lohman 12/10/08
Signature of Principal Investigator Date

Student Projects: Faculty signature indicates that this application has been reviewed and is recommended for IRB review.

Signature of Supervising Faculty	Date	IRB Approval Signature	Date
		<u>Kerry A. Agnitzer</u>	<u>January 13, 2009</u>
EXPEDITED per 45 CFR 46.110(b) _____, Category _____, Letter _____			
STUDY REMAINS EXEMPT per 45 CFR 46.101(b) _____			
WAIVER of SIGNED CONSENT per 45 CFR 46.117(c) <u>yes</u>			
WAIVER of ELEMENTS of Consent per 45 CFR 46.116 <u>no</u>			
VULNERABLE POPULATION per 45 CFR 46. <u>no</u>			

Please answer each question. If the question does not pertain to this study, please type not applicable (N/A).

SECTION I: KEY PERSONNEL

- ☐ Yes ☒ No Have there been any personnel/staff changes since the last IRB approval was granted?
If yes, complete the following sections (Additions/Deletions) as appropriate.

Add	Delete	Last Name	First Name

Add New Row

List all current members and relevant experiences of the project personnel. This information is intended to inform the committee of the training and background of the investigators and key personnel.

NAME & DEGREE(S)	POSITION AT ISU & ROLE ON PROJECT	TRAINING & DATE OF TRAINING
✓ Brenda Lohman, M.S., Ph.D.	Assistant Professor, Human Development and Family Studies Faculty Affiliate, Institute for Social and Behavioral Research As a Principal Investigator of the Three-City Teacher Study, Prof. Lohman's role at Iowa State University was to oversee the teacher survey and collection of school records. She now is supervising the coding, documenting and analyzing of this data.	ISU Human Subjects Training, 09/03/03 Involved in data collection of large-scale surveys for over 10 years.
✓ Melissa Schnurr, BS, MS ✓ Brinn Shjegstad, BS, MS ✓ Duhita Mahatmya, BA	Graduate Research Assistants at ISU assisted the PI and ISBR Staff in preparation and implementation of the project. They are now responsible for the daily office tasks and the coding, documenting, and analyzing of this data.	ISU Human Subject Training 08/27/03 Melissa 01/08/07 Brinn 08/07 8/12/07 Duhita

Add New Row

SECTION II: CONTINUING REVIEW

In addition to completing Section I: Key Personnel, please complete Section II if this is an application for Continuing Review. If this is an application for continuing review and you will be modifying your project in the future, please complete all sections of the form. **If this application is only to request approval for a modification or change to your study, please complete Section I: Key Personnel and Section III: Proposed Modifications or Changes.**

Part A: Enrollment Status

- ☒ Yes ☐ No Is the research **permanently** closed to the enrollment of new participants?
- ☒ Yes ☐ No Have **all** participants completed all research-related interventions?
- ☐ Yes ☒ No Does research remain active only for long-term follow-up of participants?
- ☒ Yes ☐ No Are the remaining research activities limited to data analysis? OR

5. ☐ Yes ☒ No Participant enrollment has not begun and no additional risks have been identified.

Number of Participants Approved by IRB: 2000 teachers	Number of Participants Consented to Date: 816 teachers
Number of Participants Consented Since Last Continuing Review: Total: 816 Males: 702 Females: 114	
Number of Participants Screened: 1194	Number of Participants Lost to Follow-up: 0
Check if any enrolled participants are: It is not know if our teachers were pregnant; however the TCTS survey did not have any risks that would have harmed a pregnant woman or her fetus. <input type="checkbox"/> Minors (under 18). Age Range of Minors: <input checked="" type="checkbox"/> Pregnant Women/Fetuses <input type="checkbox"/> Cognitively Impaired <input type="checkbox"/> Prisoners	Check below if this project involves either: <input type="checkbox"/> Existing Data/Records <input type="checkbox"/> Secondary Analysis <input type="checkbox"/> Pathology/Diagnostic Specimens
List Estimated Percent of the Total Enrolled That Are Minorities Below	
American Indians: 0.4%	Alaskan Native:
Asian or Pacific Islander: 3%	African American: 19%
Black (Not of Hispanic Origin):	Hispanic: 21%

1. ☐ Yes ☒ No Have any participants withdrawn or have you asked any participants to withdraw from the study?

List number for each and reason for withdrawal:

--

Part B: Protocol Summary – Please use the amount of space needed to adequately address the questions.

1. Please provide a concise summary of the purpose and main procedures of the study.

The Welfare Reform and Well-Being of Children Study is a longitudinal study of approximately 2000 children and their caregivers in Boston, Chicago, and San Antonio that was conducted by Research Triangle Institute (RTI). The aim of this study is to assess the long-term consequences of welfare reform for child well-being (Iowa State University IRB approval, 03-805). As an additional study and a supplement to the wave 3 survey of the Welfare Reform and Well-Being of Children Study, we collected academic information from one teacher per focal child. This supplemental study is called the Three-City Teacher Survey (TCTS). It was the goal of the TCTS to interview a sample of approximately 2000 teachers to obtain an additional assessment regarding the life experiences and behaviors of the children and adolescents participating in the third wave of Welfare Reform and Child Well-Being Study. To further enhance our understanding of children's schooling experiences and academic outcomes, we are currently collecting academic records from the children's schools. Overall, the overarching purpose of this research study is to understand how our nation's children and families are doing in today's times and to find out what kind of support they may need to improve the quality of their lives.

2. Please provide a summary of how the study is progressing (e.g., progress to date in terms of the overall study plan, success or problems encountered, reasons enrollment has not begun, etc.)

We completed our data collection for the teacher survey of the TCTS in December of 2006. We received a total of 816 teacher surveys for the entire project. We have spent the past year entering the hard-copy surveys into the database, cleaning and coding the data, creating a long-term storage system, as well as documenting the survey protocol and response rates. We have now begun to analyze the data.

In addition, we have finished the data collection of the academic records for our students. This portion of the project was completed in the late Spring of 2007. Please see IRB application (Iowa State University IRB approval 03-805) for approved consent forms for this project. We have collected all electronic and the hard copies of the academic records for all students in the project from each of our collaborating institutions (Northwestern University, Boston College, University of Texas at Austin). We collected academic records for approximately 1000 focal children. We are now in the process of creating a database for this part of the project and have implemented a long-term storage procedure here at Iowa State University which keeps this information in a locked-file cabinet in a locked-office.

3. Is there any new information (positive or negative) from this study (e.g., interim analysis) or elsewhere (e.g., current literature) that might affect someone's willingness to enroll or continue in the study? It is especially important for the investigator to notify the IRB of literature or information that's relevant to the risks to participants in the study.

No.

4. Please provide a summary of amendments or modifications since last IRB review.

April 08 - procedures for data sharing and changes in personnel were approved.
per prior review (KR)

Part C: Adverse Events and Unforeseen Problems

1/13/09

1. ☐ Yes ☒ No Have there been any adverse events or unanticipated problems involving risks to participants or other people?

If yes, please give them numbers and describe.

If yes, was it reported to the IRB? Date reported
 If report was not submitted, please explain why.

2. ☐ Yes ☒ No Have there been any participant complaints?

If yes, please describe.

Attach any reports submitted to NIH or a Data and Safety Monitoring Board. ☐ Attached ☐ N/A

Part D: Informed Consent

1. ☒ Yes ☐ No If a signed Informed Consent Form was required, was Informed Consent obtained from all participants?

If no, please explain.

2. ☒ Yes ☐ No Are all signed Informed Consent Forms on file with the PI?

If no, please explain.

Electronic consent was obtained via the websurvey.
--

3.

☐ Attached
☒ N/A

Submit copy of the currently approved Informed Consent Form and an original unstamped copy (if stamped). If changes have been made, please submit the original, a copy with the changes highlighted, and a copy to be stamped with IRB approval

☐ Attached
☒ N/A

Submit currently approved informational letter

☐ Attached
☒ N/A

Submit an unstamped copy of all survey instruments, interview questions, recruitment materials, instructions, and all other material participants will see or hear during their participation so that a current IRB approval stamp can be added. If changes have been made, please submit the original, a copy with the changes highlighted, and a copy to be stamped with IRB approval.

SECTION III: PROPOSED MODIFICATIONS OR CHANGES

If this application is to request approval for modification or changes to your project, please complete Section I: Key Personnel and Section III.

The submission of a modification form is required whenever changes are made to an approved project. This includes but is not limited to a title change, changes in investigators, resubmission of a grant proposal involving changes to the original proposal, changes in the funding source, changes of an instrument, advertisements, reports from a data safety and monitoring board, addition of a test instrument, etc. **NOTE: All changes must be submitted and approved by the IRB prior to their implementation, unless the change is necessary to protect the safety of participants.**

1. Does your project require approval from another institution, please attach letters of approval?

☒ Yes ☐ No

2. The following modification(s) are being made (check all that apply):

- ☐ Change in protocol.
☐ Change in type or total number of participants. New anticipated total:
☐ Change in informed consent document.
☐ Change in co-investigator(s). New co-PI name:

Signature of new Co-PI: _____

- ☐ Change in funding source/sponsor. Please attach copy of grant proposal sent to new funding agency.
☐ Other (e.g., change in project title, adding new materials, adding advertisement, etc.)

NOTE: If the change involves a new Principal Investigator, a new Human Subjects Review form must be submitted.

3. Describe the modification(s) indicated above in sufficient detail for evaluation independent of any other documents. When submitting revised documents please submit one clean copy of the new document and a copy with the changes highlighted.

CHILD CARE ACCESSIBILITY SCALE:**>P_HC41<**

Now I'd like you to tell me whether you agree or disagree with each of the following statements about the childcare arrangement we've been talking about. Pick your answer from Card HC-2.

The first statement is: You found a childcare provider who shares your values. Would you say you...

- 1 = Strongly disagree,
- 2 = Disagree,
- 3 = Agree, or
- 4 = Strongly agree?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC42<

How much do you agree or disagree with the next statement: You like the way the childcare provider views the world. Would you say....

- 1 = Strongly disagree,
- 2 = Disagree,
- 3 = Agree, or
- 4 = Strongly agree?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC44<

There are good choices for childcare where you live.(How much do you agree or disagree that there are good choices for childcare where you live? Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC45<

When you made this arrangement, you had more than one option.(How much do you agree or disagree that when you made this arrangement, you had more than one option? Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC46<

You've had difficulty finding the childcare you want.(How much do you agree or disagree that you've had difficulty finding the childcare you want? Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC48<

In choosing childcare, you've felt you had to take whatever you could get.(How much do you agree or disagree that in choosing childcare, you've felt you had to take whatever you could get? Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC49<

For your childcare arrangement, transportation is a big problem.(How much do you agree or disagree that for your childcare arrangement, transportation is a big problem? Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW

-2 = REFUSED

>P_HC57<

You never worry about the childcare provider being there when he or she's supposed to.
(How much do you agree or disagree that you never worry about the childcare provider being there when she's supposed to. Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC58<

If [CHILD] is mildly sick, you can still rely on the childcare arrangement.(How much do you agree or disagree that if [CHILD] is mildly sick, you can still rely on the childcare arrangement Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC59<

If [CHILD]'S childcare provider is out sick, there is another arrangement you can turn to.
(How much do you agree or disagree that if [CHILD]'S childcare provider is out sick, there is another arrangement you can turn to? Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

ACCESS13

Composite score for accessibility to childcare

Original items used to create composite variable: phc41a, phc42a, phc44a, phc45a, phc46a, phc48a, phc49a, phc57a, phc58a, phc59a

Notes: The composite score was calculated by taking the mean of the above items. The mean was calculated only if 7 items or more were valid. See appendix for more details.

CHILD CARE AFFORDABILITY SCALE

>P_HC43<

Low cost was the most important reason you chose the childcare you did.(How much do you agree or disagree that low cost was the most important reason you chose the childcare you did? Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC47<

Your family does without things you need in order to pay for childcare.(How much do you agree or disagree that your family does without things you need in order to pay for childcare? Would you say...)

- 1 = STRONGLY DISAGRE,
- 2 = DISAGREE,
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC51<

You have difficulty paying for childcare.(How much do you agree or disagree that you have difficulty paying for childcare? Would you say...)

- 1 = STRONGLY DISAGREE,
- 2 = DISAGREE
- 3 = AGREE, OR
- 4 = STRONGLY AGREE?
- 1 = DON'T KNOW
- 2 = REFUSED

>P_HC52<

You can't afford the kind of childcare you would like.(How much do you agree or disagree that you can't afford the kind of childcare you would like? Would you say...)

1 = STRONGLY DISAGREE

2 = DISAGREE,

3 = AGREE, OR

4 = STRONGLY AGREE?

-1 = DON'T KNOW

-2 = REFUSED

AFFORD13

Composite score for affordability

Original items used to create composite variable: phc43a, phc47a, phc51a, phc52a

Notes: The composite score was calculated by taking the mean of the above items. The mean was calculated only if 3 items or more were valid. See appendix for more det